E-COMMERCE AND SMALL AND MEDIUM ENTERPRISES (SME) IN LEAST DEVELOPED COUNTRIES:

THE CASE OF TANZANIA

By

SALAH KABANDA (KBNSAL001)

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy in Information Systems

DEPARTMENT OF INFORMATION SYSTEMS

FACULTY OF COMMERCE

UNIVERSITY OF CAPE TOWN

Feb. 2013

DECLARATION

I hereby declare that

E-COMMERCE AND SMALL AND MEDIUM ENTERPRISES (SMES) IN LEAST DEVELOPED COUNTRIES: THE CASE OF TANZANIA

is my own work, and all sources have been acknowledged through referencing.

Signed by candidate

Signature removed

.....

S.KABANDA

PREFACE

Parts of this thesis have already appeared in publications. These include:

Conference proceedings:

- Proceedings of the 11th International Conference on Social Implications of Computers in Developing Countries, Kathmandu, Nepal, May 2011
- International Conference on Information Management and Evaluation. University of Cape Town, South Africa. 25-26 March 2010
- 18th European Conference on Information Systems. 6th to 9th of June 2010. Pretoria, South Africa.

Book chapter:

- Institute for Computer Sciences, Social Informatics and Telecommunications Engineering 2012

Journal:

- The African Journal of Information Systems: Vol. 3: Iss. 1, Article 1, 2011

This acceptance by the scholarly community has given direction, encouragement and impetus to the production of this thesis. In all cases, the published works have been re-formatted, updated and synthesized into this thesis.

ABSTRACT

The purpose of the study was to investigate the E-Commerce phenomena in Tanzania with the goal of understanding how E-Commerce is typically made sense of by Tanzanian SMEs and how the sense making is produced, sustained and affected by environmental and organisational conditions. Structuration theory was used as a theoretical lens from which the social construction of the E-Commerce phenomena could be understood. The study primarily adopted a subjective interpretive stance. A preliminary quantitative study using questionnaires and interviews was done to gain an initial understanding of the E-Commerce status quo in Tanzania. The main study was qualitative in nature and used interviews with 33 Tanzanian SMEs as the data collection method. A phased approach was adopted in the data analysis stage – firstly thematic analysis was used to report on SME owner's experiences and meanings, whilst examining the ways in which these experiences and meanings come about. Secondly, the theory of communicative action was used as a complementary analytical approach to analyse possible distorted communications by SME agents. Finally structuration theory was employed as a lens to interpret the findings.

While it is true that E-Commerce creates opportunities for Tanzanian SMEs to be effectively involved in global markets, findings in this study show that SME owners for the most part view E-Commerce as merely having a static web presence that acts as a marketing instrument of the organisation, coupled with the significant use of the mobile device. SME owners frequently used mobile technology, as they drew upon their understanding of mobile technology's ability to offer transactive capability, mobility and communication. They engaged in limited use of websites as they drew upon their understanding of websites as being incompatible with Tanzanian socio-cultural beliefs. Websites were nevertheless perceived as a platform from which they could continue to build a sophisticated image and advertise/market their products. A problem-solving practice with foreign partners was also enacted through social networking websites, with the purpose of mitigating most of the local web based E-Commerce challenges. The study has several recommendations for example: the deployment of an effective E-Commerce policy specifically tailored around both traditional and mobile E-Commerce; and feasible on-going partnership programmes between government, education institutions and the

private sector in addressing human resource challenges and social ills such as graduate's lack of business ethics.

ACKNOWLEDGEMENTS

My most humble acknowledgement goes to the All Mighty Allah who provided me with the strength to accomplish the writing of this thesis – Alhamdullilah.

I acknowledge the support and love from my family which was always there. I thank Mama and Baba for always motivating me and persistingly questioning when I am going to finish the thesis; my siblings and husband for listening and being there emotionally throughout my research trials; and Baby Mariam Asimwe for arriving at the right time in my life. To all of you, I am grateful.

Finally, I extend my acknowledgement to the Department of Information Systems, University of Cape Town, specifically my supervisor, Prof Irwin Brown for all the wisdom imparted towards me throughout the research. To all staff members, I appreciate the kind words of encouragement that you provided me with during this journey.

TABLE OF CONTENTS

TABLE OF FIGURES

TABLE OF TABLES

CHAPTER 1: INTRODUCTION

1.1 Introduction

Electronic transactions between enterprises have the potential to positively change the way they operate, especially for Small and Medium Enterprises (SMEs) whose needs are far more demanding than their counterparts – the large corporates (Oyelaran-Oyeyinka & Lal, 2006). Through electronic transactions SMEs are able to gain access to the same new markets as their larger counterparts (Morgan, Colebourne & Thomas, 2006), and ultimately rejuvenate themselves. This study focuses on Electronic Commerce (E-Commerce) as one of the means through which SMEs can conduct electronic transactions. The study is situated in Tanzania, a least developed country in East Africa.

The rest of the chapter is organised as follows: Section 1.2 presents the background of the study. The definition and characteristics of a least developed country is presented in Section 1.2. The problem statement is set out in Section 1.4 and the context of the study is laid out in Section 1.5. Section 1.6 presents the small and medium enterprises in a Tanzanian context. The goal of the study is set out in Section 1.7. Section 1.8 presents its research rationale, while the theory which forms its basis is presented in Section 1.9. Finally, the structure of the thesis is discussed in Section 1.10.

1.2 Background

E-Commerce is widely conceived as an avenue for integrating communities and countries into the global market economy. It is seen as a key innovation that can advance social and economic development, good governance, and poverty reduction in the developing countries of Africa (Nnafie, 2002). As a technological innovation, E-Commerce promises to reduce the costs of interbusiness transactions by (i) automating many individual steps in the transaction process; (ii) alleviating transaction inefficiencies in the supply chain; (iii) increasing revenues from sales; and, most importantly; (iv) bridging the existing development gaps between the haves and the have-nots through the integration of information systems (Ojukwu et al., 2007; Nielinger, 2003; Dai & Kauffman, 2002; Pare.

2002; Wolf, 2001; Esselaar & Miller, 2001). With these benefits in mind, SMEs in developing countries (DCs) are encouraged to adopt E-Commerce since their needs are perceived as being more demanding than their counterparts in developed economies (Oyelaran-Oyeyinka & Lal, 2006). The importance of SMEs is seen in the fact that they play a critical role in both local and international markets, offering a wealth of benefits that include, but are not limited to, economic welfare, job creation and social stability (Ladzani & Van Vuuren, 2002; Lu & Beamish, 2001). An examination of the role of SMEs is, therefore, important, more so in least developed countries (LDCs) which are deemed highly disadvantaged in their development process and, more than others, face the risk of failing to come out of poverty (UNCTAD, 2002; Sheils et al., 2003), particularly since they tend to have a per capita gross domestic product of US$900 or less, have weak human resources and a low level of economic diversification (Aljifri et al., 2003).

1.3 Least developed countries (LDCs)

Least developed countries are a group of countries which have the 'most vulnerable economies of the world, suffering from drastic economic and social problems, extreme poverty, hunger and inadequate levels of human development' (Tekin 2012). Characteristics of a least developed country include (UNCTAD, 2010):

i. Gross national income per capita. A " low income", is measured by the gross national income (GNI) per capita (average of three years, 2002–2004), with thresholds of 750 dollars for the inclusion of countries in the list and of 900 dollars for their exclusion

ii. Human Assets Index (HAI). The HAI provides information regarding the level of development of human capital. It is a combination of four indicators namely (a) nutrition (percentage of the population under-nourished); (b) health (infant mortality rate); (c) schooling (gross rate of secondary schooling); and (d) literacy (adult literacy rate);

iii. Economic Vulnerability Index. The "Economic vulnerability" is designed to reflect the risk posed to a country's development by exogenous shocks, the impact of which depends on the magnitude of the shocks and on structural characteristics that determine the extent to which the country would be

affected by such shocks (resilience). It is is measured by a composite index (index of economic vulnerability) based on indicators of: (a) natural shocks such as the index of instability of agricultural production and the percentage of the population displaced by natural disasters; (b) commercial shocks such as index of instability of exports of goods and services; (c) vulnerability to shocks such as part of GDP corresponding to agriculture, forestry and fishing; index of concentration of exports of goods; (d) small size of the economy for example a population expressed in logarithms; and (e) remoteness.

iv. A population less than 75 million inhabitants.

These characteristics have made LDCs face 'more severe problems to be integrated in the world value chain' (Goedhuys, Janz, & Mohnen 2013). As such, the LDCs are considered to be in need of the highest degree of attention on the part of the international community and all forms of assistance have been welcomes such as encouraging LDCs to adopt various strategies for example export-oriented development strategies and more open trade and investment regimes to improve their situation (Martin 2012, Tekin 2012).

1.4 Problem statement

For SMEs in LDCs to improve competitiveness, Internet-related technologies such as those used for E-Commerce may be beneficial. It is only recently that LDCs have recognised the strategic importance of ICTs and E-Commerce, for competitive advantage and in national development (Mansell, 2001; Wilson, 2003; Noronha, 2002). Most SMEs that have ventured into E-Commerce remain at the initial adoption phase of being connected (such as having email), or having static E-Commerce such as a website. Most have websites which are generally informative but lack interactive facilities for online transactions (Maswera et al., 2008, 187). Thus the majority have not reached the institutionalisation phase of having a full interactive, transactive or integrated E-Commerce capability (Molla & Licker, 2005). The SMEs' lack of institutionalisation is perceived as a concern, firstly, because they are in the vanguard of the LDCs' economy (Huff & Kelley, 2005) and, secondly, because institutionalisation is regarded as the future of most E-Commerce activities, as it has the potential to facilitate the integration of LDCs into the global economy. Such institutionalisation offers SMEs the potential of

unlimited access to new markets, both locally and internationally, and access to new, improved, inexpensive and convenient operational methods of transacting as E-Commerce transactions are not restricted to limited hours of operation, as with traditional practice (Dholakia & Kshetri, 2004).

Although E-Commerce shows many promising benefits for SMEs, it must be recognised that it is not a panacea for all the LDCs' ills, although when contextually placed and implemented it is a potential tool for alleviating some of them. The issue of context for LDCs is of paramount importance when advocating for 'technologies and organizational practices which were originally designed and proved useful in other socio-organizational contexts because their potential value, their fit in the local socio-organizational conditions and feasibility of use cannot be taken for granted' (Avgerou, 2001, 44). For example, SMEs in LDCs still adopt policies, strategies and business practices based on the assumption of universal imperatives which have high risks of misguiding and frustrating local efforts to make sense of and to appropriate the new technology (Avgerou, 2001). E-Commerce in these countries tends to be implemented using standard business models that are not tailored to meet local business and social etiquettes and thus fail to deliver their promises (McBride, 2000). This is because research in developing countries has tended to have a technological determinism focus in which researchers become more absorbed by techno-centric matters. The emphasis on technology in this manner tends to ignore the context that shapes the technology development process and its usage and fails to unravel the underlying cause of ICT- and E-Commerce-related failures (Lamb & Kling, 2003; Sawe & Simbo, 2002). Brown & Duguid (1991), as referenced by Jarzabkowski (2004, 10), contextualised this more clearly when stating that 'while communities may have some broad similarities, each community has specific social interactions that constitute a unique interpretative context'. In order to determine the reason for ICT and E-Commerce's lack of institutionalisation in SMEs, it is thus necessary for researchers to be concerned with the contextual discourse, not only the technology (Wilson, 2003).

There have been some attempts to contextualise E-Commerce in developing nations (Abbas, 2007; Efendioglu et al., 2002; Panagariya, 2000). A significant number of these studies have, however, focused on more developed emerging economies such as China,

India, Sri-Lanka, Malaysia (Salwani et al., 2009) and South Africa (Molla & Licker, 2005; Cloete, 2002). Only a few researchers have investigated African LDCs with a non-technological determinism stance (Molony, 2008). This present study, therefore, subscribes to the notion that information technology is a social construction and that its implementation must be contextualised to suit the social framework of the community in which it operates. For E-Commerce to be a success in LDCs and, specifically, to be institutionalised, a comprehensive assessment of socio-technical business practices and political discourse is required to reveal the behaviour, social phenomena and power structures that cause various actions to take place or not – such as SMEs' reluctance to institutionalise E-Commerce (Bekefi, 2006; Kijo-Ringo, 2004; Nielinger, 2003). In conducting such an assessment, the study hopes to provide greater understanding of a context-specific business model for E-Commerce in LDCs. At issue in the problem statement is an understanding of E-Commerce in the context within which it is embedded – the Tanzania socio-cultural system.

1.5 Contextual basis of the research

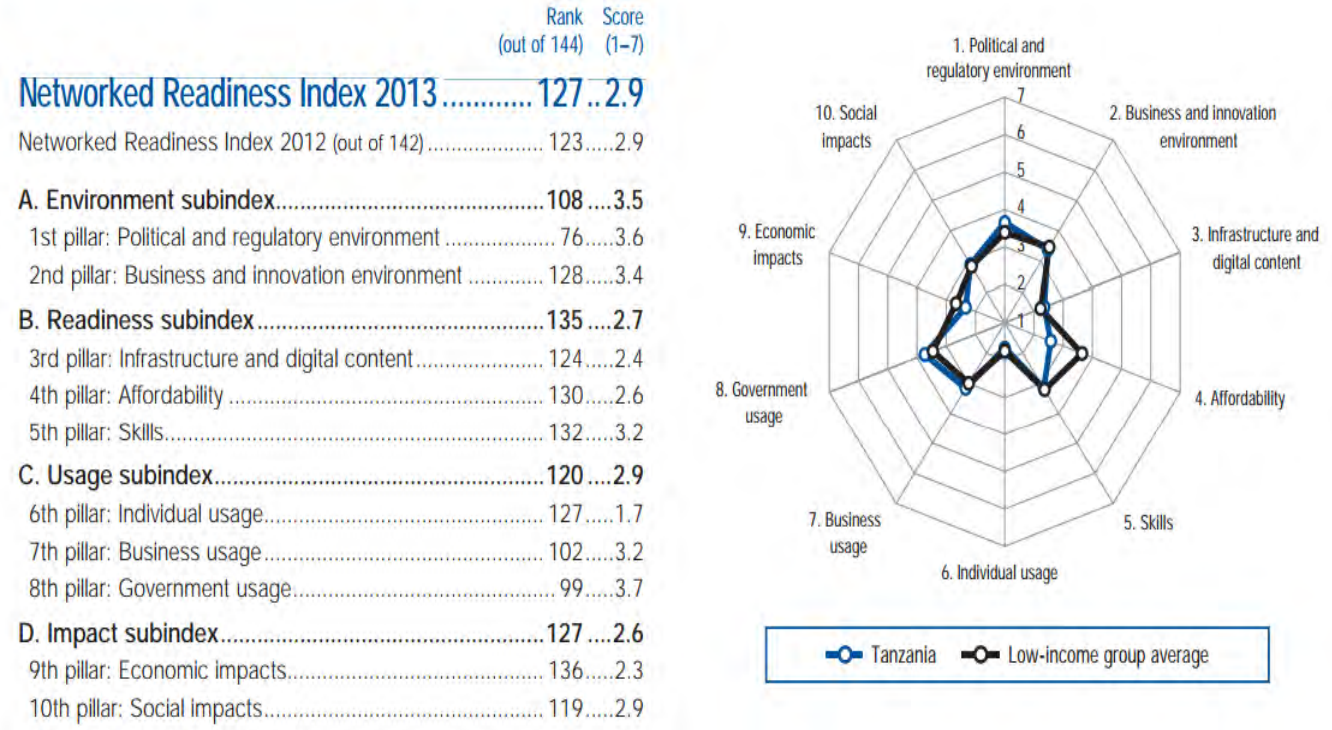
Tanzania, created out of the merger of Tanganyika and Zanzibar, is located geographically on the eastern coast of Africa. It has a total coastline of 1,424 km (see Figure 1), a population of just over 41 million people and a total area of 945,090 sq. km. Following its independence from Britain in 1964 the country concentrated on building an independent nation by first instituting a form of socialism known as Ujamaa (togetherness), a 'new conception, based on the understanding that what we need to develop is people, not things, and that people can only develop themselves' (Nyerere, 1967, http://www.ntz.info/gen/b00524.html#id03205). Ujamaa propagated national unity, self-reliance and development by resettling people in communal villages. Although Ujamaa increased literacy, reduced infant mortality, increased life expectancy, maintained peace and national unity (Fahamu http://tallprojects.conted.ox.ac.uk), it did not give any incentive to the private sector enterprises, labelling them as enemies of the state (Ngowi, 2009).

Figure 1: Tanzanian map (source: http://businessafrica.net/africabiz/countries/tanzania.php, date accessed March 2011)

The country remained a one-party democracy, dominated by the Chama Cha Mapinduzi (Revolutionary Party) with a socialist model of economic development until political pluralism was introduced in 1995 (Ngowi, 2009). Since then, Tanzania has been acknowledged as one of the few African countries that have remained relatively calm since independence, maintaining a long history of ethnic, racial, and religious cohesion (Kaiser, 1996). This achievement in national integration has been brought about, as Hyden (1999, 6) suggests, as a result of the spread of Kiswahili as the national language; the emphasis on consensual decision making, social harmony, and civic peace; and the fact that the country had only one political party for more than 30 years after independence helped to institutionalise these values, even if it was often done at the expense of other values, including those associated with liberal democracy.

Despite this political freedom, Tanzania still remains 'one of the countries in the world with worst preparations to utilise ICTs to boost competitiveness and people's wellbeing (pctech magazine 2013). The economy still 'largely fails to address the needs of ordinary Tanzanians such as healthcare, education, employment, and poverty reduction' (Dagne, 2011, 3). This has been attributed partly to the lack of privatisation of public institutions

and the legacy of Ujamaa's view of 'private sector enterprises, as enemies of the state' (Ngowi, 2009, 263). There is limited evidence of Internet-based E-Commerce activities in Tanzania because the country still suffers from 'strong connectivity gaps and environments that lack the conditions to allow for a full leverage of the benefits of ICTs' (Global Information Technology Report 2013, 270). Three forms of E-Commerce are reported in the literature. The first is E-Commerce in the tourism industry in the form of online portals and reservation and booking systems (Oreku et al., 2009). Another is *Radio One*, a Tanzanian Internet radio station and a type of B2C E-Commerce, offering information about the country to people tuning in (Lake, 2000). There is also SimplyAfrican.com which sells high-quality African art to art lovers in the United States (Li, 2002). Esselaar and Miller (2001) have commented on the lack of government-to-citizen or government-to-business projects that harness the potential of E-Commerce in Tanzania. The limited visibility of Internet-based E-Commerce activity is due to many factors. One of these is the low poor Networked Readiness Index (NRI) as shown in Figure 2.



	Rank (out of 144)	Score (1–7)
Networked Readiness Index 2013	**127**	**2.9**
Networked Readiness Index 2012 (out of 142)	123	2.9
A. Environment subindex	**108**	**3.5**
1st pillar: Political and regulatory environment	76	3.6
2nd pillar: Business and innovation environment	128	3.4
B. Readiness subindex	**135**	**2.7**
3rd pillar: Infrastructure and digital content	124	2.4
4th pillar: Affordability	130	2.6
5th pillar: Skills	132	3.2
C. Usage subindex	**120**	**2.9**
6th pillar: Individual usage	127	1.7
7th pillar: Business usage	102	3.2
8th pillar: Government usage	99	3.7
D. Impact subindex	**127**	**2.6**
9th pillar: Economic impacts	136	2.3
10th pillar: Social impacts	119	2.9

Figure 2: Global Information Technology Report (2013, 270)

The 2013 Global Information Technology Report ranks Tanzania at 127 out of 144 countries on the networked readiness index, four places down from last year's report, which placed the country at 123. The poor NRI score of 2.9 shows the lack of a conducive environment in Tanzania with regards to the development of a network of information and communication technologies. Tanzania also has a low Internet penetration rate (14%) in comparison to mobile penetration (74%) (Budde.com 2013). It is estimated that total available Internet and data capacity in the country is currently at 3,459Mbps, out of which 1,475 is from satellite and the remaining from fibre optic technology. In June 2012, the country had 5, 6 million Internet users (ITU 2013). This is merely 13% of the entire Tanzanian population – condusive grounds for the digital divide problem. For example, there are 16 times more people per Internet café in the rural regions of Iringa, Mbeya and Songea compared to urban Dar-es-Salaam, and in the semi-urban region, Morogoro, where there are seven times more people per café (Furuholt & Kristiansen, 2007).

The ICT landscape is slowly showing changes due to several infrastructure projects for submarine cables and terrestrial optical fiber cables along the East African Coast. One of these projects is the East African Submarine Cable System Project (EASSy) which aims to promote regional cooperation in the use of information and communication technology with the aim of nurturing peace, encouraging economic development and reinforcing regional integration in the Great Lakes Region (GLR) (ICGLR 2005). Another project is SEACOM which serves to directly connect South Africa and eastern Africa with Europe and Southern Asia, covering a distance of over 17 000km worth of fiber optic technology. Since operating in 2009, SEACOM financed and developed the first broadband submarine cable system along the eastern and southern African coastlines, bringing with it a vast supply of high quality and affordable internet and has increased tenfold the bandwidth penetration in several of Africa's most underserved nations (SEACOM,2012).

1.6 Small and medium enterprises in Tanzania

As in many other developing countries, Tanzania has many small and medium enterprises (SMEs) which play a critical role in the economy, especially with respect to employment. SMEs have been defined differently, using different parameters, in different countries.

Some use the number of persons employed, the amount of capital invested, the amount of turnover or the nature of the business (Kapurubandara & Lawson, 2006). This present study adopts the Tanzanian government's definition of the SME, and has classified it in terms of sector, employment size, and capital investment in machinery. The government classifies an SME as an enterprise with between five and ninety-nine employees, with a capital investment in machinery of between five and 800 million Tanzanian shilling (Ministry of Industry and Trade, Small and Medium Development Policy, 2002). The Tanzanian economy is dominated by SMEs which are at the forefront of the country's private sector as they provide employment to more than 56 percent of all the employed labour force (Ngasongwa, 2008; Turner, 2002).

There has been limited research in Tanzania concerning E-Commerce and SMEs. Most researchers investigate general ICTs and SMEs. For example, Matambalya and Wolf (2001) investigated a sample of 300 SMEs in East Africa. Their results show that the use of ICT by SMEs in Kenya as well as in Tanzania is increasing over time, with the usage of fixed phone lines nearly reaching the saturation point (although still lower in Tanzania than in Kenya). In Tanzania, Nielinger (2003) and Pigato (2000; 2001) found that computer usage, and Internet usage in particular, still remains very low, even in firms that own computers. As for those individuals who have computers and ICTs, under-utilisation is a common feature with a widespread gap between availability and effective use. Nielinger (2003) found that 36 per cent of SME enterprises had access to a facsimile machine and one-third had access to email. However, both technologies account for only nine and ten per cent of total business correspondence, leaving the outstanding 81 per cent to traditional, non-electronic means.

An E-Commerce specific study in Tanzania for SMEs was conducted by Massawe and Nzuki (2005). They report that the diffusion of ICT has been less extensive among SMEs mainly because of little awareness of E-Business and E-Commerce prospects. As a result, they lack ICT infrastructure, E-Commerce platforms and reliable business information which contribute to difficulties in successfully participating in the global markets. As for SMEs that have some form of E-Commerce, some face payment system problems because the existing Visa debit card payment system is accessible only to those with bank

accounts, thereby limiting the growth of a number of SMEs (Massawe & Nzuki, 2005). Another E-Commerce study in Tanzania is by Mlozi et al. (2010) who advocated that WiMAX technology be used by SMEs, especially by those in the tourism sector so as to reap the benefits that will come with Internet connectivity.

1.7 Research goal and research questions

The research context of LDCs and Tanzania, in particular, shows that there is limited evidence of Internet-based E-Commerce activities (Massawe & Nzuki, 2005), and if there were, the majority of enterprises have not gone beyond the initial adoption phase of E-Commerce (Molla & Licker, 2005). It has been argued that the reason for this is the lack of a contextual understanding of the impact of organisational and environmental variables on the adoption of E-Commerce (Avgerou, 2008; Montealegre, 1997). The purpose of this study is, therefore, to investigate environmental and organisational practices by which E-Commerce becomes socially constructed in SMEs in LDCs. The focus is on how E-Commerce is typically made sense of by Tanzanian SMEs and how this sense-making is produced, sustained and affected by the environmental and organisational conditions and resources of Tanzanian SMEs. It is against this background that this study intends to find answers to the following research questions:

1. What are the socially constructed practices of Tanzanian SMEs with regard to E-Commerce?
2. How does the ongoing situated use of E-Commerce in SME interact with environmental and organisational conditions and resources to produce and reproduce social structures of E-Commerce?
3. What are the unintended consequences of enacted E-Commerce practices in Tanzanian SMEs?

1.8 Research Rationale

The contribution of E-Commerce towards social development, especially through business advancement in developing countries, has been very well researched so as to identify

potential facilitators and inhibitors of E-Commerce diffusion (Molla & Licker, 2005; Chen & Ning, 2002). LDCs have, however, received little to no recognition. Where recognition is offered, the discussion has tended to concentrate on organisational and technical factors, with little emphasis given to the general societal context influencing the perception, shape and adoption of E-Commerce.

The Economic Commission for Africa, through its African Information Society Initiative (AISI), 'has identified E-Commerce as one of the four key areas in Africa to exploit ICTs to best advance social and economic development' (Esselaar & Miller, 2001, 2). Through the assistance of international organisations and donors, African countries are embarking upon national processes and projects to formulate and implement ICT policies and strategies, specifically with regard to E-Commerce. However, each country is different and may face different challenges which need exploration. This study, then, strives to understand the organisational and environmental conditions and resources that play a role in how E-Commerce is perceived and used by SMEs in Tanzania. Such understanding requires the analysis of the social structures in which SMEs work. Failure to consider the social practices that underpin E-Commerce can lead researchers and policy makers to overestimate the potential savings that may be incurred and underestimate the new costs that firms in LDCs may incur from participating in electronic transactions (Pare, 2002). The study is also influenced by the realisation that E-Commerce activities in Tanzania are often geared towards western markets and the diaspora. The number of local consumers is currently quite insignificant compared to foreign consumers. Knowledge of the determinants and perception of Tanzanian SMEs towards E-Commerce will assist in establishing more focused efforts to stimulate appreciation of E-Commerce in LDC (Esselaar & Miller, 2001; Li, 2003). The study is finally influenced by the realization of the fact that Africa is underresearched due to many factors such as the 'political instability within certain countries in the region, the poor collaboration of the private sector and the academics in tertiary institutions in DCs, which influences the potential for research, and the lack of requisite human and technical resources to offer programs in the IS discipline (Boateng et al., 2008).

1.9 Research underpinning theory

The study is explorative in nature and follows an interpretive perspective in order to understand how specific conceptions, and social practices lead to various behaviours (Alvarez, 2002), for example, the adoption and institutionalisation of E-Commerce. An interpretive paradigm gives explicit recognition to the world of consciousness and humanly created meanings (Heracleous & Barrett, 2001; Ngwenyama & Lee, 1997) that is critical to this study's attempt to uncover SMEs' perception of E-Commerce. In this paradigm, actors are viewed as active sense-makers, engaged participants, and creators of life in their settings, and thus their identities emerge from discourse (Alvarez, 2002). Interpretive studies, therefore, support the need to understand contextual matters and aim to create a coherent, consensual, and unified representation of the reality of participants, despite their complexities and contradictions (Deetz, 1996). This paradigm has the potential to pay attention to not only what factors affect E-Commerce, but also to how social structures influence and are influenced by actors' perception and decision making about E-Commerce and ICTs in general. As a guiding lens, we adopt structuration theory to explore the E-Commerce social phenomena (Alvarez, 2002). Structuration theory is inherently dynamic and because it is grounded in ongoing human action, it has the potential to explain emergence and change in technologies and use (Orlikowski, 2000).

1.10 Structure of thesis

The thesis is arranged as follows: Chapter 1 introduces the research and gives the purpose of the study. Chapter 2 will provide a literature review on E-Commerce. Chapter 3 highlights the theoretical basis of the research and Chapter 4 describes and discusses the research approach, paying attention to how the data will be collected and analysed. The actual data collection and a report on the field research findings are documented in Chapters 5 to 7. An extrapolation of the field research findings in the context of the theoretical findings is made in Chapter 8. Evaluation of the research conduct is presented in Chapter 9. Finally, Chapter 10 concludes and provides recommendations and future research work related to this study.

CHAPTER 2: E-COMMERCE AND DEVELOPING COUNTRIES

2.1 Introduction

The purpose of this study is to investigate the environmental and organisational practices by which E-Commerce becomes socially constructed in SMEs in least developed countries. E-Commerce, therefore, is the phenomenon of interest from which this study – situated in the contextual environment of least developed countries – is based. The purpose of this chapter is to present a theoretical framework to the E-Commerce phenomenon and to contextualise its utilisation in least developed countries.

The rest of this chapter is organised as follows: section 2.2 examines how E-Commerce has been defined in literature and presents a definition of E-Commerce as adopted in this study. Section 2.3 illustrates the categories of E-Commerce. Section 2.4 scopes the literature of E-Commerce into three areas, namely, technology, applications, and support and implementation issues. Section 2.5 discusses E-Commerce in developing countries in general. Section 2.6 presents the different E-Commerce business models that add value to an organisation's strategy. Section 2.7 presents the factors that affect E-Commerce adoption and institutionalisation. Section 2.8 discusses E-Commerce adoption maturity status. Section 2.9 concludes the chapter.

2.2 Defining E-Commerce

There has always been a grey area in the difference between Electronic Commerce (E-Commerce) and electronic business (E-Business) (Jones et al., 2000). E-Business has been defined as the conduct of business with the assistance of telecommunication and telecommunications-based tools (Eikebrokk & Olsen, 2007); 'the transformation and streamlining of an organization's value chain activities through use of Internet technologies' (Holsapple & Singh, 2000, 152); the use of the 'Internet to conduct or support business activities along the value chain' (Zhu & Kraemer, 2005); and 'the marriage between the Internet and supply chain integration' (Johnson & Whang, 2002, 2). Wu et al., (2003, 425) comprehensively define E-Business as the 'use of Internet technologies to link customers, suppliers, business partners, and employees using at least

one of the following: (a) E-Commerce websites that offer sales transactions, (b) customer-service websites, (c) intranets and enterprise information portals, (d) extranets and supply chains, and (e) IP electronic data interchange'. A common thread among researchers is that E-Commerce is a subset of E-Business that involves the purchasing, selling, and exchanging of goods and services with business partners and buyers over computer networks (Mahadevan, 2000). It is the conduct of 'transactions between two or more parties using interconnected network' (Kalakota and Robinson, 2003, 628). This study views this understanding of E-Commerce as a narrow definition that does not address the contextual needs of developing countries and therefore opts to define E-Commerce as a form of innovation in which parties interact electronically to perform one or more of the following functionalities depending on their contextual resources and constraints: (i) communication, such as delivering information, products/services, or payments via telephone lines, computer networks, or any other means; (ii) the application of technology toward the automation of business transactions and workflow; (iii) the meeting of the desire of firms, consumers, and management to cut service costs while improving the quality of goods and increasing the speed of service delivery; (iv) the provision of the capability of buying and selling products and information on the Internet and other online services (Boateng et al., 2008; Ngai & Wat, 2002).

2.3 Categories of E-Commerce

E-Commerce is divided into four main categories, namely, Business to Consumer (B2C), Business to Business (B2B), Consumer to Consumer (C2C), and Government to Business (G2B).

2.3.1 Business to Consumer Transactions

Business to Consumer transactions are commercial transactions that involve the exchange of products, services, or information between businesses and the general public typically through catalogues using shopping cart software. The typical user is transformed into a computer user, and the physical store is transformed into a 'phenomenon that is information technology intensive - a Web site' (Koufaris et al., 2001, 115). Amazon.com, which sells books and other items over the Internet, is an example of a B2C E-Commerce

initiative in which the company gets in touch with its consumers directly. Although developed economies have made use of B2C, developing countries still lag behind (Kurnia & Ali, 2012). They, however, have created their B2C niche by selling their products to the global market of their Diasporas, for example, Ethiogift.com (Ethiopia) used to be an organization that catered for Ethiopians expatriate who buy gifts on-line to be delivered to relatives or friends living at home. However, this organization no longer exists. Another organization is the LifeinAfrica.com from Uganda, which sells traditional clothes to African-Americans and promotes African culture (Li, 2003). Other examples include Kalahari.com, South Africa's largest online retailer of millions products such as books, eBooks, music, DVDs, games and electronics; and the Africa's Largest Online Marketplace - bidorbuy.co.za which brings buyers and sellers together in an online marketplace where sellers can sell virtually anything online and shoppers can bid for or buy almost anything in either an online auction or at a fixed price, in buy-now format. Most niche shops, however, rarely have access to their customers who are geographically widely spread. B2C enterprises, thus, have to rethink beyond that radius of service and product delivery (Sue et al., 2010).

2.3.2 Business to Business (B2B)

Business to Business (B2B) is a form of commercial transactions that involve the exchange of products, services, or information between 'two separate business parties', such as between a manufacturer and a wholesaler or between a wholesaler and a retailer (Chong et al., 2011, 518). B2B transactions cover all 'transactions that historically had been conducted using relational interfirm exchanges' (Grewal et al., 2010, 45). This category of E-Commerce involves many more participants than B2C, needs a large infrastructure, and its volume of transactions is usually higher than the volume of B2C transactions. Such transactions are governed by complex business rules of the buyer and seller, involve higher purchase amounts, and require that order fulfillment be much more certain and predictable than does B2C (Phillips & Meeker, 2000). With these requirements, barriers raised by geographic fragmentation of the market are reduced; buyers get to know about new sellers with better products; suppliers discover new buyers; and both parties enjoy reduced order processing costs and a lower cost of interacting with

each other. The core advantage of B2B is not just lower prices but market intelligence, which helps suppliers identify and serve yet unfulfilled market needs, and the supply chain integration which provides improvements in logistical processes (Bloch & Catfolis, 2001). B2B transactions have traditionally been reserved for large companies that had the necessary resources to implement it. Following the move towards a process-centric B2B approach which lowers the costs involved for B2B adoption, SMEs have also been given a chance to adopt B2B instead of its being reserved for larger enterprises that are able to afford the costs (Dorn et al., 2009). Rong & Ye (2011, 439) caution that by adopting B2B, SMEs not only 'add e-business factor to the already complicated supply chain resulting in the difficulty in supply chain analyzing, but also import new variable quantity to the risk early warning of supply chain'. An understanding of these risks is critical if SMEs are to survive the competitive business world. This is even more important, given that 'SMEs do not understand the complementary nature of the organizational drivers such as adoption readiness, constraints and evaluation of investments that support strategic alignment and therefore fail to realize benefits from their web sites' *(*Lin et al., 2011a, 304).

2.3.3 Consumer to Consumer transactions

It is not only organisations that conduct business on the Internet. Consumers can also exchange products, services or information between themselves. This is a form of Consumer to Consumer transactions also called person-to-person (P2P) E-Commerce. It takes place between consumers who are no longer totally reliant on corporations but are increasingly looking to conduct their own business transactions mainly in auctions, online communities, chat rooms, third-party consumer listing services, and Web-based discussion forums where they can buy and sell their products and services via several different payment methods of mailing checques or cash to the seller via online payment systems (González, 2004). In this manner C2C markets eliminate the 'intermediary who otherwise pockets a certain percentage of the selling price as profitability' (Strader & Ramaswami, 2002, 46). Consumers do not only buy and sell but can also share their past experiences and learn one another's bidding strategies in auctions and forums (Oh, 2002). This form of E-Commerce business model is more popular in China than anywhere else in

the world accounting for 93 per cent of all Internet transactions in the second quarter of 2008 (Chen et al., 2007; Li & Liu, 2007; iResearch, 2008). Examples of C2C include Taobao.com market place and auction websites such as eBay.com and Yahoo.com which are increasingly becoming popular (Jenamani et al., 2011, Du et al., 2012). For example, eBay.com, has over 116.2 million registered users at the end of the first quarter in 2013 (Evans 2013). Their popularity is not only due to the ease of interactions between users but also due to the fact that 'C2C online transactions have no time and space restrictions compared with tradition auction models, so they maximize the probability of transactions and help identify the real value of the merchandise' (He et al 2008,287). Despite the increase in users, this form of commerce relatively lags behind other forms of E-Commerce. This is partly due to the lack of trust on the seller's reputation (Ye et al., 2013) because of entering into transactions with an individual with whom one has had little or no previous interaction (Houser and Wooders 2006); localization of market services and a low penetration of the C2C market by Internet users such as in China (Li et al., 2008); and the lack of intention to purchase which has become a main barrier in the development of electronic commerce (He et al 2008, 287). To address these problems, reputation mechanisms that allow traders to identify and monitor each other have been devised (Cabral and Hortacs 2010). In addition, trust models for C2C have been investigated with the intention of improving trust and repeated buys (Jones and Leonard 2008). Another solution has been to increase the number of C2C customer base by converting members of their virtual communities (VCs) into C2C buyers and sellers' (Lu et al 2010, 346).

2.3.4 Government to Consumer/Business/Government

Organisations and consumers can also conduct business with the government via computers and a Web-enabled presence (Evans & Yen, 2005). It is an exchange of products, services, or information between consumers (C2G), businesses (B2G) and the government (G2G) with the government (this can range from procurement to government collecting fees such taxes. Procurement has been viewed as an opportunity for efficiency gains in government as it has the power to lower prices due to centralised spending and reduce the cost of issuing invoices and other administrative work for low-value, high-

volume goods (Panayiotou et al., 2004). The largest potential saving originates from lower prices thanks to centralised spending. As regards its citizens and other businesses, the government aims to provide better service levels and enhance seamless government services by increasing the convenience and accessibility of government services and information to its citizens (Helbig et al., 2009). Research has shown that citizens' acceptance of E-government rests on trust, information access, public accessibility, quality of service, time saving, efficiency of service, and social awareness (Scholl et al., 2009). E-government research has, however, been criticised for emphasising the supply-side and playing little attention to the demand-side, especially from the context of their developing world (Luna-Reyes et al., 2007 as referenced by Helbig et al., 2009).

2.4 Scoping E-Commerce research

E-Commerce studies have been scoped into three categories of technology-related topics, namely, application-related topics, and support and implementation-related topics (Ngai & Wat 2002). Technology-related issues primarily comprise telecommunication, networking and other infrastructure issues. Application-related issues include software-related issues such interorganisational systems (IOS) and the data integration solutions based on standardization. Finally, support and implementation issues pertain to business strategies for value creation, growth and customer development and retention, as well as institutional issues that address various cyber laws dealing with security, crimes, etc., and government policies for nurturing the growth of E-Commerce.

2.4.1 Technology-related issues

Technology-related issues focus on the conductivity of the telecommunication, networking and other infrastructure issues for E-Commerce. The greatest concern with regard to web-based applications has been on the issues of security, privacy, quality and costs involved. Concerns of security and privacy of web-based applications is as a result of the massive interconnection of heterogeneous and distributed systems, the availability of high volumes of sensitive information at the end systems maintained by corporations and government agencies, easy distribution of automated malicious software by malfeasors,

the ease with which computer crimes can be committed anonymously from across geographic boundaries, and the lack of forensic evidence in computer crimes, which makes the detection and prosecution of criminals extremely difficult (Joshi et al., 2001).

2.4.1.1 Security issues

There is a persistent concern over the security of web-based applications, which have been deployed over the Internet, even more so as E-Commerce is becoming increasingly integrated in business and adopted by individual consumers (Lardner, 1999). Information on the Internet is prone to malicious attacks, such as eavesdropping and data theft, identity theft, piracy and password-related threats, as well as being modified or viewed in transit (Shiguo et al., 2009). The possibilities of what could go wrong on the Internet have made most users reluctant to provide sensitive personal information to web sites. AlSlamy (2008) suggests that as regards payment 'one needs to establish a sense of security' in respect of a website because there is an exchange and processing of sensitive information, such as bank card numbers, personal identification numbers and passwords (Suh & Han, 2003). Security can be examined from four dimensions, these being data, technological solutions, organisational policies to ensure security, and institutional policies to support security mechanisms. Data security at organisational level has been at the forefront for many researchers, and it is said that E-Commerce must meet at least the basic security standards tabulated in Table 1:

Dimension	Explanation
Integrity	The data contained is valid and protected from deletion and corruption, both while it resides within the database, and while it is being transmitted over the network
Non repudiation	Denial of the existence of a contract and/or refusal to perform a contract obligation. Repudiation is an anticipatory breach of a contract
Authenticity	The ability to identify the identity of a person or entity with whom you are dealing on the internet
Confidentiality and Privacy	Allowing individuals to see only the data which they are supposed to see. Issues of privacy of communication, secure storage of sensitive data, authenticated users and granular access control must be borne in mind to achieve confidentiality and privacy
Availability	Ensuring that data is available to authorized users, without delay. However performance must remain adequate regardless of the number of users or processes demanding service, bearing in mind that security mechanisms for Internet-enabled systems must support much larger communities of users

Table 1: Dimensions of E-Commerce Security (Laudon & Traver, 2010, 5-8).

Consumers, however, consider insufficient the methods used for web security such as electronic signatures, digital certificates, smart cards, biometrics and network security applications such as firewalls, password protection, and the inspection of web activities, This perception is a hindrance to E-Commerce because, as AlSlamy (2008, 340) explains, 'any business that wants to have a competitive edge in today's global marketplace should adopt a comprehensive security policy in consultation with partners, suppliers, and distributors that will provide safe environment for the coming proliferation of E-Commerce'.

2.4.1.2 Privacy issues

Privacy in E-Commerce is defined as the degree of control one has over one's personal information with respect to its collection, use, and transfer by entities engaged in E-Commerce (Bansal & Chen, 2011; Boritz & No, 2011). It is important for Internet users that information is kept private (that is, not divulging it for illegally use by others) while users traverse a network of computers, is important because 'E-Commerce applications frequently require customers to divulge many personal details about themselves that must be protected carefully in accordance with privacy principles and regulations' (Hecker et al, 2008, 54). An assurance of information privacy creates and maintains trust in both the Business-to-Consumer (B2C) and Business-to-Business (B2B) E-Commerce environment (Boritz & No, 2011); and to some extent determines 'E-Commerce success and ultimately its adoption' (Jiang & Ji, 2009, 2). According to McKnight et al., (2002, 297), 'building consumer trust is a strategic imperative for web-based vendors because trust strongly influences consumer intentions to transact with unfamiliar vendors via the web. Trusts helps consumers to overcome perceptions of risk and uncertainty, and to engage in the following three behaviors that are critical to the realization of a web-based vendor's strategic objectives: following advice offered by the web vendor, sharing personal information with the vendor, and purchasing from the vendor's web site. Sharing of personal information can be a daunting task as it involves privacy violation issues. However, 'when privacy information is made more salient and accessible, some consumers are willing to pay a premium to purchase from privacy protective websites' (Tsai et al., 2011, 254). Factors that could alleviate privacy concerns are numerous, but the most common are the three paradigms devised to address the issue of privacy.

Because the customer trusts that the network conforms to his privacy policy, he agrees to transmit his identity and required resources, and is able to suspend or resume trusted nodes' treatment of his personal data (Bella et al., 2011, 706). A privacy policy document is usually used to erase privacy concerns 'while collecting the personal or non-personal or both the information of the user of that site at that juncture' (Chandra et al., 2009, 2). Privacy policies describe the practices followed by an organisation as regards the way they collect data, what they use the data for, who has access to the data beyond the organisation itself, how long the data is to be retained, and who will be informed about the data and under what circumstances (Chandra et al., 2009). In so doing, the organisation offers consumers a choice to exercise their rights when their personal information is being used because they can now determine whether - and to what extent - they wish to make information available to companies (AlSlamy, 2008). Consumers are thus empowered to control their own data and are able to limit access to it via the consent provided by the policy (Hecker et al., 2008). Chandra et al. (2009) and McDonald and Cranor (2008), however, have found that some policies are too difficult for the customer to understand, being in some cases either too small or too large and in the case of others, their content indicates that they are not true privacy policies and, further, do not make rational decision-making possible.

The second paradigm is based on anonymity, meaning that data are linked with a pseudonym and not with the customer's real identity, for example, by allowing the user to create a virtual identity or scrubbing the data stored by the organisation to remove the identity details (Bella et al., 2011). The most popular anonymous communication systems, however, often pay dearly in terms of overheads that cause the Internet browsing to slow down significantly (Hsiao et al., 2012). The third paradigm 'is a natural tradeoff between the first two thereby removing both the need for the customer's trust in the network and the need for his anonymity' (Bella et al., 2011, 706). In this paradigm, privacy of identity or anonymity is shifted towards privacy of data, and the original data are concealed. This means that both the need for full network trust and for anonymity are removed. Other factors that alleviate privacy concerns are the service provider's credibility and ability to provide the service in terms of expertise and experience because 'protection mechanisms rooted in policy or law are only effective when data collectors are

honest and trusted. They offer no protection against a dishonest collector or one whose data is compromised by malware, laptop theft or a weak password' (Golle & Partridge, 2009 390). Featherman et al. (2010) add other factors, such as consumer beliefs that the online services will be easy to use. Jiang and Ji (2009) suggest that in developing countries, cultural and institutional factors must be regarded as key to the alleviation of privacy concerns.

2.4.1.3 Quality issues

Issues of E-Commerce quality have tended to focus on finding ways to enhance consumer experience (Su et al., 2006). Recent literature summarises website quality features into four categories, namely, content, design, organisation and user friendliness, as shown in Figure 3.

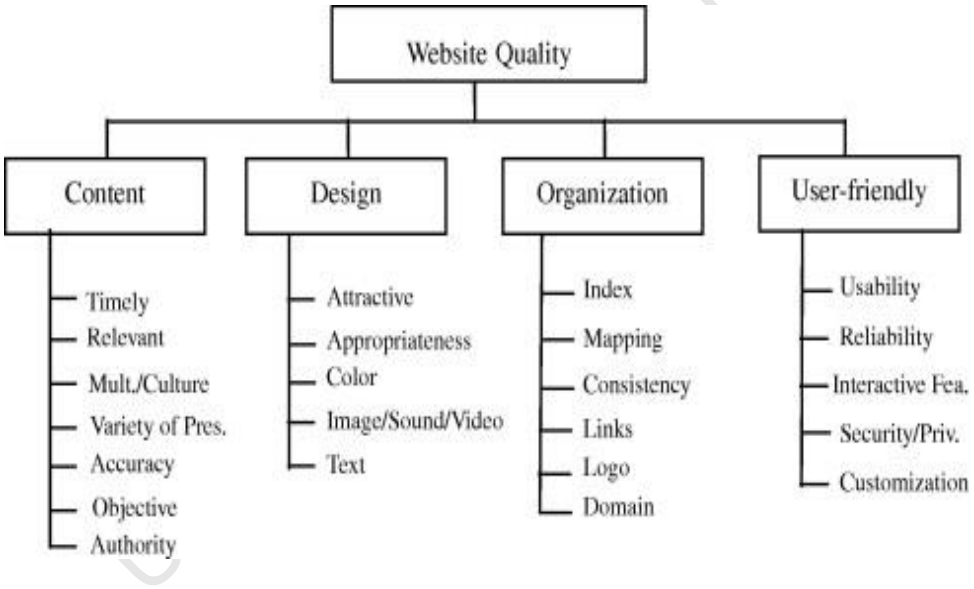


Figure 3: Assessing website quality (Hasan & Abuelrub, 2011, 17)

The content feature addresses the characteristics of websites' information. Information on the website should be up-to-date and state when the site was updated so as to determine its currency. It should be precise, with no spelling or grammar errors, comprehensive, complete, and provide the right level of detail without compromising on cultural issues, especially language, so as to meet the needs of all customers regardless of their county. Further, it should not have any political, cultural, religious, or institutional bias and should be presented in different formats so that all users, including the visually impaired, can download or listen to the form that suits him/her. In addition, website users should be

able to verify the information either by, for example, contacting the organisation's physical address, or sponsor(s) of the site.

The design dimension addresses the 'visual characteristics of websites' design that attract the users and encourage them to stay longer time viewing the website and reenter it' (Hassan & Abuelrub, 2011, 20). Such characteristics include innovativeness in the website, such as the aesthetic effects of the text and its consistency in appearance, graphics and animation; the non-text elements which are used within the website, colours: as well as the appropriateness of every feature on it, for example, images used within the pages, to serve their functional purposes. All these factors can trigger a favourable emotional appeal that could encourage them to spend more time viewing the website and re-enter once again, or an unfavourable responsible of never visiting the site again.

The organisation's quality dimension refers to the 'logical grouping, categorization, or structure of websites' elements in order to help the user to reach the required information quickly, navigate easily within the website, feel comfortable within its layout consistency, and keep him/her informative that he/she is still in the same website (Hassan & Abuelrub, 2011, 22). Factors that are make the achievement of organisational quality possible include an index or a link to all the website's pages, a website map or navigation bar/menu on each page to facilitate navigating the website, a consistent general layout of each page, links that work properly, and a clear and noticeable organisation logo on every page of the website.

The user-friendly quality dimension refers to the many issues that help any user regardless of his/her education or experience to find the needed information within a reasonable time, the capability of the website to maintain specific level of performance when, and interactivity or connectivity which emphasize the existence of interaction between user and website using different tools (Hassan and Abuelrub, 2011, 23). User-friendliness is achieved when users can tailor the content of the website according to their needs, find the website easy to use in finding information or navigating, reliable (the website's address appropriate and easy to remember), interactive in that the website has clear instructions to use different parts/sections/forms of it, and help is provided where necessary, and secure, and the privacy of personal information is maintained.

2.4.1.4 Costs associated with E-Commerce technologies

The numerous methods and technologies used to attain quality, whilst ensuring consumers are secure and their information privacy adhered to, are typically costly for an organisation, and more especially for SMEs (Rotchanakitumnuai & Speece, 2003). For example, service quality is considered as an important aspect in the marketing of a product/service since it relates to, among others things, costs and financial performance (Gounaris et al., 2010). An organisation may incur direct costs, for example, the use of hardware solutions to ensure privacy may require users to purchase technology to access services securely; and indirect costs are incurred for the required time and installation effort, the learning costs for use, and dealing with malfunctions of the software solutions are examples of such indirect costs (Kauffman et al., 2009, 1).

Most organisations perceive protecting privacy as time- consuming and costly – until a loss of private customer information occurs (Kauffman et al., 2009). To counteract the perceived high costs of implementation, many organisations choose not to implement at least some such security measures and, in so doing, jeopardise the organisation's reputation for having the ability to provide the service (Singh, 2004; Rotchanakitumnuai & Speece, 2003; Wang et al., 2003). Failure to implement these has led to a lack of trust by users as to the integrity of information and the way that it gets used by businesses and other organisations whose websites they interact with.

2.4.2 E-Commerce applications

Businesses conduct e-commerce transactions through standards such as electronic data interchange (EDI) the XML-based standards, RosettaNet and Biztalk. This section discusses the data integration solutions based on standardization, the Service Oriented Architectures (SOA) as an architecture for software systems and some E-Commerce applications.

2.4.2.1 Electronic Data Interchange

EDI is a trading protocols served as the standard for B2B (Hasselbring & Weigand, 2001) and a critical element in the construction of electronic trading and electronic commerce infrastructures (Damsgaard & Lyytinen, 2001b). It is an interorganisational system that involves the relatively fast delivery movement of business documents electronically to facilitate communication and information exchange between trading partners with little, or without human intervention, on a more timely and frequent basis (Damsgaard & Lyytinen 1998, 2001a; Tan et al., 2010). The ability of EDI to 'exchange standardized documents between computer systems for business use' (Philip et al., 2011, 68) makes it a technology that 'replaces the faxing and mailing of paper documents' in organizations such as governments and companies institutions (Zubi 2010, 832). The rationale was mainly in achieving business document interoperability, especially in conducting business-to-business (B2B) commerce across the supply chain (Downing, 2010; Kabak & Dogac, 2010).

Maggiolini and Salvador Valles (2012) identify two basic conditions for companies to derive the maximum benefit from EDI: integration between the EDI network and the internal computer system, measured by the number and different kinds of documents used; and secondly to use EDI with as many partners as possible. They further indicate that 'the degree of innovation in business processes introduced by EDI and strategies such as ECR, cooperative work, etc. will also affect the level of benefits' (Maggiolini & Salvador Valles, 2012, 61). However achieving these benefits meant organisational boundaries are lowered (Ciborra, 1995) and the organisation's internal processes are somewhat exposed to business partners (Webster, 1995), thereby creating a high degree of organisational interdependence between participating parties. Whilst EDI is the standard for B2B, HTML, HTTP and other protocols have been employed for B2C. However such these protocols have proved to be either difficult or costly to implement, or lack platform flexibility and fail to support commercial transaction concepts (McGann & Lyytinen, 2002). They usually lack the explicit notion of a business process causing every exchanged document to stand on its own and consequently the process context becomes lost (Engel et al., 2011).

Traditionally, EDI required heavy initial investment in software and training (Jimenez-Martinez, 2004), and dedicated lines or value-added networks (VANs) which were costly and complex, especially to SMEs that lack the necessary resources present in their larger counterparts, and 'because of their less favorable organizational context and their lower level of EDI integration' (Raymond & Blili, 1997, 165). It requires advanced and reliable telecommunication infrastructure (Kimberley,1994), considerable skills and know-how to implement and operate (Webster, 1995) which developing countries still struggle with and unfortunately when not in place can seriously slow down the diffusion rate (O'Callaghan & Eistert, 1995).

In addition, there are standardization issues because EDI is usually customized and implemented on a pair-wise basis, incurring considerable set-up and maintenance costs (Damsgaard & Truex, 2000). EDI standards like X12 (American intersectoral standard) and EDIFACT (Electronic Data Interchange For Administration, Commerce and Transport) use domain context standardization as an efficient mechanism for intersectoral and international electronic data exchange for partners, belonging to the same sector, to communicate. Unfortunately these standards support business transactions between a limited set of known trading partners and fail to provide a standardized representation of information supporting different areas and indexing for discovery purposes (Belouadha et al.,2012).

With the advancement of technology, however, some SMEs can now adopt EDI applications at a much lower cost and thereby reap their benefits (Kuan & Chau, 2001). Iacovou et al. (1995) studied small firm EDI adoption and identified three factors to be significant in SMEs: perceived benefits, organizational readiness, and external pressure. For example Goksoy et al., (2012) presents an application of EDI in an SME in automotive industry in Turkey. They show the benefits of using EDI applications, explain how companies easily implement EDI in their system and what the advantages of these applications are in an SME context. Musawa & Wahab (2012) investigated the adoption of EDI technology by Nigerian SMEs. They found direct benefits, financial resources, and external pressure being considerably more important than technological resources and internal pressure. AlBakri (2013) found that most of Jordanian SMEs have

little or no competitive pressure to use internet EDI systems, since most suppliers, customers and other competitors do not seem to promote such systems. Narayanan et al. (2009) attempt to address some of EDI challenges by providing a set of guidelines for making successful EDI adoption and implementation decisions. Lee and Lim (2003) suggest that companies contemplating EDI should set-up compatible business processes and a high-quality partnership for implementation and performance. Three levels of EDI diffusion have been proposed by Damsgaard & Lyytinen (2000c, 1062) provide insights into three levels on how and why changes in EDI use happen. The first level is the organizational level which focuses on characteristics of individuals or rganizational unit that use or might adopt EDI. The second is the industry level which focuses on the interoragnizational nature of EDI, its dependency on infrastructure and on third party operators as well understanding how extra-organizational power and resource dependencies shape and are being shaped by the diffusion process. The final level is the socio economic level which establishes boundaries for the diffusion process by recognizing necessary regulatory regimes as focal points that constrain or enable the diffusion process'. Damsgaard & Lyytinen (2001) indicate how institutional involvement, such as governmental agencies, national and global standardization organizations, local government, and nonprofit private organizations like industry associations is imperative for the diffusion of EDI. Using institutional theory, it has been found that institutional factors strongly influence financial EDI adoption because firms are faced with pressure from their institutional environments to adopt practices and polices considered to be legitimate (Sila & Dobni., 2012). Failure to do so, they may be devoid of the resources and social support required to be competitive.With these levels in mind, Ghobakhloo et al (2011) emphasizes the importance of articulating how the adoption and use of EDI and other EC applications are influenced by technological, organizational, and environmental circumstances, especially in the context of SMEs owing to their unique characteristics and since majority of prior EC research has focused on large organizations.

2.4.2.2 Extensible Markup Language (XML)

EDI is perceived as a legacy language that is becoming hard to support and 'the legacy languages and development tools needed to support the legacy system are increasingly difficult or expensive to obtain. In consequence of legacy languages; people are scarce.

People that know the legacy languages are becoming difficult to find and retain. Younger staffs are reluctant to learn "legacy" languages because it does not appear as value added for their longterm career' (Umussaa'dah Adam & Tan 2012, 93). Based on these problems, the extensible markup language (XML) is increasingly becoming the Internets communication format that many business are supporting. XML is used to store, present or exchange data. It defines data formats in e-commerce frameworks. It is used to encode information and services with meaningful structure and semantics that computers can readily understand and therefore makes 'transmitting data over the Web inexpensive and efficient' (Shim et al 2000, 41). XML lets applications communicate regardless of the programming model, and many software vendors support it as a universal Internet format. It has therefore become the 'de facto standard for data representation and exchange in e-commerce' (Chang and Chen 2012, 2183). According to Nurmilaakso (2008, 1), 'the XML format dominates in cross-industry-process e-business frameworks and has gained a footing in industryspecific e-business frameworks'. XML-based e-business frameworks have been developed such as the Electronic Business XML (ebXML) and RosettaNet. ebXML is 'a modular suite of specifications that enables enterprises of any size and in any geographical location to conduct business over the Internet' (Nurmilaakso et al 2006, 587). The the objective is to provide an open XML-based infrastructure enabling the global use of electronic business information in an interoperable, secure and consistent manner by all parties (Singh and Sidhu, 2013). RosettaNet helps interpret information for the supply chain members within IOS because as a standard it enables companies to communicate electronically with other companies using the same e-business standards (Chong et al., 2009). As a standard that integrates the telecommunications supply chain, it develops "robust open business process standards, encompassing data dictionaries, implementation framework, and XML-based business message schemas and process specifications" (RosettaNet, 2008). The goal of RosettaNet is to 'facilitate speed, efficiency, and reliability to enable greater collaboration and communication between trading partners' (Loong, 2010). Despite the XML advantages, which seem to be more than what EDI offers, it should be noted that 'XML is not replacing EDI in the near future because the benefits of XML do not outweigh its costs' (Nurmilaakso 2008, 5).

2.4.2.3 Service Oriented Architecture (SOA)

According to Wang and Hu (2009, 424) 'e-commerce is not merely a website for goods display, but rather an integration platform of all the information service resource which includes the control of material flow, capital flow and information flow of inventory'. However, the traditional 3-layered E-commerce platform can't meet the requirement of today's E-commerce application because the platform does not allow for easy information intergration. For example, E-commerce systems have been implemented using various distributed object oriented (00) techniques in a client server architecture, such as Distributed Component Object Model (DC OM) and Common Object Request Broker Architecture (CORBA) which did not provide for improved interoperability, components re-use and organisations' agility (Ntawanga et al., 2011). These platforms and techniques therefore 'cannot let clients share the commercial data in terms of their need and the platform is not in a form of a whole assembled software or webpage package reflecting various kinds of need of the customer or providing solutions for each specific customer request (Zheng et al., 2009, 50). These proposed platforms did not 'provide the capability to develop innovative business models and business services at run time to attract more "Participants" into such communities (vertical and horizontal B2B e-Commerce hubs)' Mohamed et al., 2010, 781). The service oriented architecture (SOA), a system architecture that is enterprise service oriented, has emerged and adopted by many organizations to address issues of intergration of the supply chain (Wang and Cen, 2013, Li et al., 2012, Gospodarek, 2010). It is an 'architecture building method used to describe, link and integrate the reusable business services with clear boundary and self-contained functions' (Wang and Hu 2009). The main purpose is 'to solve business integration problem in the internet environment' (Yan et al., 2010, 572); and 'improve efficiency and reduce operating costs by promoting a faster flow of information, optimizes the business processes and adds corporate business value' (Basias et al., 2012, 162). It has the potential to 'provide quick and inexpensive changes of the internet technology (IT) in order to establish new business partnerships or to reflect changes in existing partnerships' (Mohamed et al., 2010, 777). SOA 'enables businesses to leverage existing investments by allowing them to reuse existing services, and ensure interoperability between heterogeneous applications and Technologies' (Xin & Zhiguang, 2010, 763). Given the

advanced architecture building method of SOA, integration platform of e-commerce can now be built that satisfy the need of current e-commerce system development. For example, SOA presents itself as the potential solution for addressing the intergration problems in government, specifically in addressing ther dire need for managing distributed systems and providing seamless service in EGovernment, where there are different applications and platforms that cover the overall range of the E-Government implementation areas (Yan & Guo, 2010). All these different applications need to interoperate in order to provide integrated governmental services to the citizens and businesses (Votis et al., 2008). SOA is also seen as a potential solution for the airline industry whereby the SOA-based airline e-commerce platform can unite airline's information systems of different architectures together, and simultaneously meet demand of expansion of airline business in the future (Yan et al., 2010). Ezenwoke et al., (2013) has investigated how SOA could be applied to to reduce cost and the time to market for new products amongst Small, Medium and Micro Enterprises (SMMEs). SOA is therefore the solution for E-Commerce applications that require cross-platform enterprise application integration in a seamless manner.

2.4.2.4 Web-based procurement systems

One element of B2B is electronic procurement (Gunasekaran et al., 2009), a critical process in both manufacturing firms and trading companies and something that accounts for more than half of enterprises' sales volume (Lee et al., 2009). Electronic procurement (e-procurement) is a comprehensive process in which organisations use IT systems to establish agreements for the acquisition of products or services (contracting) or purchase products or services in exchange for payment (purchasing) (Gunasekaran & Ngai, 2008), and to significantly reduce costs and productivity enhancement by automating most of the procurement activities such as transaction processing (Teo et al., 2009). Such IT systems such as e-procurement software, B2B market exchanges, and purchasing consortia, must be capable of integrating multiple supplier catalogues into an aggregated buyer-managed view of the catalogue, enable a review of product purchase patterns, and deliver knowledge that can be used to facilitate supplier negotiations (Gunasekaran & Ngai, 2008). They allow organisations to easily form integrated linkages between their

different departments and with their trading partners who may be operating different internal systems. In so doing, 'firms improve their intra-and inter-organizational process integration capabilities which, in turn, yield sustained gains in organizational performance' (Tai, 2011, 380). By adopting e-procurement strategies, an organisation stands to benefit as follows: lowered transaction costs, faster ordering, wider vendor choices, standardised and more efficient procurement processes, greater control over procurement spending and better employee compliance, more accessible Internet alternatives for buyers, less paperwork and fewer repetitious administrative procedures, and reengineered procurement work flows (Gunasekaran & Ngai, 2008).

Teo et al. (2009) caution organisations that want to adopt e-procurement to assess their perceived indirect benefits from its adoption. Firm size was a factor requiring consideration, since larger firms stand a higher chance of adopting e-procurement than do SMEs who are prone to resource constraints especially in legal expertise and administration, and the lack of electronic systems (Karjalainen & Kemppainen, 2008). Business influence is another factor requiring consideration to the success and acceptance of e-procurement, especially the inclusion of major suppliers in all phases of development (Purchase & Dooley, 2010). Abu-Elsamen et al. (2010) found that, from a business customer's perspective, internal and information barriers were significant factors that impact the adoption of electronic procurement techniques. Internal barriers included inadequate in-house technological infrastructure personnel, inadequate in-house IT personnel, inadequate technological infrastructure of business partner, lack of IT system integration with the partner, changing the way people work, lack of top management support, lack of corporate strategy, and high technological implementation costs. Information barriers pertain to concerns about security of information exchange, privacy of information exchange, and about data confidentiality.

2.4.2.5 Electronic payment systems

Dani and Krishna (2001) indicate that the lack of suitable payment instruments and corresponding payment systems is one of the main bottlenecks in the growth of E-Commerce. According to Po et al. (2007) and Abdulla (2009) E-Commerce will not be complete without an Electronic Payment System (EPS) which includes debit and credit

cards, e-banking, and electronic checques. EPS is described as a monetary exchange systems initiated via an electronic communication channel between buyers and sellers in the online environment that is facilitated by a digital financial instrument (such as encrypted credit card numbers, electronic checks, or digital cash) backed by a bank, an intermediary, or by legal tender (Shon & Swatman, 1998).

Examples include PayPal, Billpoint and PayDirect International. These services facilitate person to person payments by allowing a user to send money to anyone with an e-mail address, regardless of what bank either person uses, or whether or not the recipient is pre-registered with the service (Booth et al., 2003). Specifically they allow users to send money to family and friends throughout the world. B2C payment systems can include but not limited to e-cash and MilliCent a scheme for allowing transactions that are inexpensive to be conducted securely. It targets mall-scale commercial transactions over the Web. EPS has become an attractive arena of study for many researchers because of its importance in the completion of consumer-oriented E-Commerce transactions. Some of these researchers, like Harris et al. (2011) have focused on technological aspects of the system. They found that EPS use was affected not only by functionality but also by privacy and security issues. Rigopoulos (2007) investigated customers' attitude towards a new payment service and found that usage, ease-of-use, usefulness and behavioural intention to use were critical in EPS. By using a new institutional economics perspective, Briggs and Brooks (2011) examined institutional arrangements in the development of EPS. Their study indicates that the institutional maturity of developing countries is lacking and there is a need to build necessary institutional capacity suitable for the development of safe and efficient EPS. Despite the importance of an EPS, it remains complex and difficult to implement and maintain, especially for developing countries that do not have the infrastructure, necessary institutional arrangements and financial resources to cover costs associated with the establishment of an online third-party process (Po et al., 2007).

2.4.3 Support and implementation issues

Support and implementation issues focus on the business strategy used in the building of the successful implementations of E-Commerce and its regulatory environment. The organisation business strategy focuses on value creation and the means of ensuring customer retention.

2.4.3.1 Organisation business strategy

Kleijnen et al. (2007) define value as the customer-perceived trade-off between costs and benefits. Value creation is one of the most important issues in a successful E-Commerce venture in which organisations gather, organise, select, synthesise, and distribute information to provide individual customers a customised solution. This requires a thorough analysis of online consumer behaviour in order to determine which information sources and formats are most likely to meet organisational needs at a given point in time (Grant et al., 2010). Providing quality information to potential users is crucial for businesses on the web and is a source of value that cannot be ignored (Zhao et al., 2008). Every organisation operating on the Internet should strive to create value and generate new business opportunities by focusing on leveraging information assets and capitalising on the unique features of E-Commerce, the Internet and their capabilities to mobilise and orchestrate business networks (Kauffman et al., 2010). Amit and Zott (2001) suggest that the value creation potential of E-Businesses hinges on four interdependent dimensions, namely: efficiency, complementarities, lock-in, and novelty.

Efficiency, one of the primary value drivers for E-Business is achieved when (i) information asymmetries between buyers and sellers are reduced through the supply of more up-to-date and comprehensive information; and (ii) the cheap interconnectivity of virtual markets is leveraged to enable faster and more informed decision-making. This notably strengthens the supply chain by reducing supplier costs and integrating vertically, providing a large array of products and services; making the transaction convenient for the consumer; allowing the consumer to save time; and reducing the asymmetry of information amongst parties (Zott et al., 2000). Grant et al. (2010) advise

tracking and analysing consumer's online activities so as to be able to offer information relevant to the consumer's real-time needs, thereby facilitating their purchase process.

Complementarities increase value by enabling revenue increases through offering bundles of complementary products and services, whether online or not, to customers. Organisations can bundle their offerings with complementary products from other suppliers – such as taking part in building online virtual communities – to harness the power of virtual markets (Amit & Zott, 2001). A lock-in strategy prevents the migration of customers and strategic partners to competitors so as to facilitate repeat transactions by using strategies such as loyalty programmes. To achieve a lock-in strategy, an organisation according to Lumpkin and Dess (2004), usually:

i. creates switching costs that customers would face if they were to switch to a different service provider. 'Switching costs are the various economic and psychological costs incurred in changing suppliers' (Nakamura 2010);

ii. develops dominant design proprietary standards for business processes, products, and services;

iii. establishes trustful relationships with customers; builds virtual communities to allow consumers to share their experience, access competing vendors and ideas, and shape the content they receive ;

iv. and personalises the product or enabling customers to customise products, services, or information to their individual needs in a variety of ways.

The lockin strategy makes it difficult for customers to freely move from one provider to another due to the switching costs have already incurred that are associated with the incumbent provider (Bensen & Farrell, 1994). As such, the customers become binded to the current provider due to switching costs (Shapiro & Varian 1999, p. 103–104); and the profit from the current customer equals the total switching costs plus quality/cost advantage (Shapiro & Varian, 1999, p. 114).

Novelty describes the potential of innovations to add value to the value chain through the introduction of new products or services, structuring of transactions, new methods of production, distribution, marketing, or the tapping of new markets. The innovation can

be supplemented with technology readiness, IT/business strategy alignment, availability of online revenues, competition intensity and regulatory support environment to contribute significantly to the value creation of E-Business, specifically in banks (Alawneh & Hattab, 2009).

An organisational strategy that is critical for any business and more so for E-Commerce where face-to-face interactions are limited, is the maintenance of a good rapport with consumers (Becker et al., 2009; Richards, 2006). Having successful customer development and retention programmes is thus important for businesses on the web. Wirtz and Lihotzky (2003) present customer retention strategies of trust building, virtual community, convenience, free services, individualisation, contractual agreements and technical integration to assess how customer retention can be achieved and which strategy best fits which business model. Virtual communities, such as discussion forums, news groups and online chat rooms, provide customers with a platform for mutual exchange and the development of strong emotional bonds between community members (Wirtz & Lihotzky, 2003). This relationship results in the loyalty of a member towards the community and, therefore, is a powerful retention strategy. Convenience leads to customer satisfaction and is driven by factors such as fast page loading, clear presentation and simple, intuitive navigation.

Customer satisfaction is also another mechanism used to retain customers. Free services, such as free e-mail accounts, downloads, greeting cards and online games, are mechanisms that improve customer satisfaction as a customer receives a value without a corresponding cost or payment. Individualisation is a critical customer retention strategy that (i) caters to the overall trend for individual products and services; (ii) reduces market transparency and an increase in search costs in the case of switching; (iii) leads to increased customer satisfaction while creating an effective switching barrier. In a contractual agreement strategy the retention effect results from the customer's expected costs in cases of breach of contract or from upfront payment for services. In an online scenario, contractual agreements can be achieved through the technical integration of an interface to a supplier's offering into the customer's work station (Wirts & Lihotzky, 2003).

2.4.3.2 Institutional environment in support of E-Commerce growth

Bansal and Chen (2011, 1) state that '[t]rust and E-Commerce go hand in hand because the primary interface in E-Commerce is a website, and the buyers don't actually physically know the sellers, unlike the traditional business, hence the role of trust in E-Commerce becomes even more important'. Trust is thus a key issue in propagating E-Commerce as it has been ranked a key barrier and inhibitor of E-Commerce and any successful business strategic alliance (Corbitt et al., 2003). Governments across the world are encouraged to ensure institutional trust that will encourage a conducive legal environment for E-Commerce. Most legal and regulatory issues are addressed through the endorsement of policies that safeguard electronic transactions. These policies ensure legal recognition and a functional equivalent between electronic and paper-based transactions so as to promote public confidence and trust in the former (Ogunyem, 2006). These policies should encourage private investment in basic ICT infrastructure (Schware, 2005), security of online transactions (Gibbs et al., 2002), a pro-competitive ICT regulatory framework (Petrazzini & Kibati, 1999), and an independent regulatory institution empowered to enforce regulations and suitable processes by which regulatory decisions are adopted and enforced (Schware, 2005).

Muir and Oppenheim (2002) suggest the need to focus on E-Commerce laws such as taxation difficulties associated with E-Commerce caused by the massive number of daily transactions conducted by anonymous people worldwide. This has been one of the focuses of the United Nations Commission on International Trade Law (UNCITRAL Model) which concentrates on mechanisms for the integration of E-Commerce with traditional commercial law (e.g., recognising the validity of electronic documents) and the equivalence of paper (traditional) with current electronic transactions. UNCITRAL recognises that the increased use of electronic authentication techniques as substitutes for handwritten signatures and other traditional authentication procedures is critical to the success of E-Commerce and, thus, calls for a specific legal framework to reduce uncertainty that may result from the use of such modern techniques. The UNCITRAL model pays attention to core E-Commerce legal regulations of E-contracting/transaction laws; other auxiliary legal issues such as laws protecting parties, transactions, systems and data; and the processing and retention of electronic data and the admissibility of electronic evidence in courts. The Model Law has been used as the basis for E-Commerce

regulation in many countries (Ogunyemi, 2006). In support of the UNCITRAL Model, governments have focused on encouraging E-Commerce development through laws and regulations designed to support or regulate private online business initiatives. To further assure online consumers, Muir and Oppenheim (2002) commend the adoption of Alternative Dispute Resolution (ADR) to promote consumer confidence and participation in E-Commerce.

2.5 E-Commerce in developing countries

Table 2 although not exhaustive, shows the various literatures that have been conducted in developing countries from the period 1990-2013 about E-commerce (for a more thorough review analysis see Appendix 3). Studies that were conducted involved: the diffusion, adoption, behavioral influences, Electronic-Banking and e-Government Diffusion. Studies on mobile commerce were also selected from the same time frame as indicated in Table 2. It is evident that most of the studies have been in the more developing countries of Africa, Asian, and Latin America. For example in developing countries there were a total 67 studies in comparison to 31 for LDCs. 75% of the studies in developing countries were on Internet E-Commerce with 7 African countries represented. Studies that focused on LDCs were minimal specifically in Africa. For example, in Africa, only 4 African countries were investigated for E-Commerce specific studies; and 5 countries investigated Mobile Commerce. This is a negligible number given that there are 34 LDCs in Africa; and it is one of the proofs of the neglect of African LDCs in regard to E-Commerce studies. In addition, majority of these studies are positivistic in nature and followed an objective approach. As such, none of the studies were concerned with the investigation of the E-Commerce phenomenon with the purpose of understanding why people behave as they do within their specific cultural and contextual settings (Alvarez, 2002). The typical theoretical lenses used to analyse data were the Technology Acceptance Models (TAM), Theory of planned behavior, Unified Theory of Acceptance and Use of Technology (UTAUT) which tend to amplify technology and view the user as a passive agent in the whole process (Edwards et al 2005).

Only three studies focused on qualitative approaches and theories that tend to appropriately address contextual issues, for example social relational and group theories (Mwangi 2006), change agent theory (Duncombe & Molla 2006), the Technology-

Organisation-Environment Framework (Kurnia and Peng 2008, Gibbs et al 2002), innovation diffusion characteristics (Alghamdi et al 2011, Windrum & deBerranger 2002), and culture theory (Vatanasakdakul and Tibben 2004). Only two studies of a qualitative nature were conducted in LDCs on E-Commerce.

Region	Total papers	Focus	Method	Underlying Theory	Geographic Coverage
Least developed country (31)	11	▪ E-Commerce diffusion ▪ E-Commerce Adoption ▪ Behavioral influences on E-Commerce ▪ Electronic-Banking; ▪ e-Government Diffusion	▪ Survey based through a questionnaire ▪ Literature review analysis ▪ Feature investigation method ▪ Qualitative and interpretive approach - unstructured and semi-structured face-to-face interviews, web-site analysis, observation and document analysis ▪ Multiple regression analysis, Exploratory factor analysis, Principle component analysis	▪ study social relational and group theories; ▪ The technology acceptance model (TAM) ▪ Parsimonious evaluation framework ▪ Country readiness for the networked world ▪ Change-agent theory ▪ Theory of planned behavior ▪ Unified Theory of Acceptance and Use of Technology (UTAUT)	Africa (6)
	20	▪ Implementation Challenges of Mobile Commerce ▪ Appropriation of mobile telephony at the bottom of the pyramid ▪ Social and Economic Implications of Mobile Telephony ▪ Mobile Telephony in Economic Development ▪ Mobile Opportunities, Mobile Problems ▪ Consumer use of mobile ICT ▪ Mobile Phone Usage among Women Entrepreneurs ▪ Mobile Phones and Agricultural Markets ▪ mobile phones to rural livelihoods and poverty reduction	▪ Ethnographic ▪ geospatial approach ▪ Survey based ▪ questionnaire, face to face interviews and focus group discussions ▪ Online Questionnaire & secondary data collected from books, academic journals, articles from the conferences, internet and newspapers	▪ Technology Appropriation ▪ Theory On Price Dispersion ▪ Activity And Gender Theories ▪ Theories Of Technology Acceptance And Technology Transfer ▪ Sustainable Livelihood Framework ▪ Capability Approach to Livelihood Status. ▪ Technology–Organization–Environment (TOE) Model; ▪ Task-Technology Fit (TTF) model.	▪ Africa (6) ▪ Asia (2)
Developing countries (67)	50	▪ E-commerce adoption and Acceptance ▪ Diffusion of ICTs and E-commerce adoption in manufacturing SMEs ▪ Perceived benefits and management commitment to e-business usage ▪ Regulatory Challenges ▪ Growth and usage of E-Commerce Usage ▪ E-Commerce Strategy and Performance ▪ Adoption and effectiveness of electronic banking ▪ Effective utilisation and the adoption of more sophisticated ICT solutions ▪ E-Readiness Factors in E-Commerce Adoption ▪ Effects of infrastructure and policy on e-business ▪ Predicting e-commerce adoption intentions and success of B2B e-commerce ▪ E-commerce Support Determinants of E-Commerce Adoption ▪ Environment factors affecting B2B e-marketplace adoption	▪ Cross-Sectional Survey; Measures Of Central Tendency, Dispersion And Correlation Analysis. ▪ Survey Based Through a Questionnaire ▪ Face-To-Face Interviews ▪ Case Study Approach Utilising Semi-Structured Interviews, Observation and Document Review ▪ Literature Review Analysis ▪ Advanced Multivariate Modeling (Structural Equation Modeling) ▪ Partial Least Squares Analysis ▪ Multiple Regression Model ▪ Fuzzy Preference Relations - Multiple Case Study	▪ Resource Base View theory ▪ Diffusion of Innovation (DOI) ▪ Innovation Decision Process (IDP) ▪ Technology Acceptance Models (TAM) ▪ TOE ▪ Internet and EDI adoption models; ▪ Transaction cost theory and strategic management perspectives ▪ Perceived Organizational E-Readiness (POER) And Perceived Environmental E-Readiness (PEER) ▪ Analytic Hierarchy Process (AHP) ▪ A Culture Theory	▪ Africa (7:25) ▪ Asia (10:17) ▪ South America (4) ▪ Arab nations (2:4)
	17	▪ mCommerce Adoption ▪ Adoption of Mobile Payment Systems ▪ Determinants of Internet and Cell Phone Banking Adoption ▪ Mobile Phones and Financial Services ▪ Trust and Risk in M-Commerce ▪ Comparative Analysis of Mobile Phone Usage among Women Entrepreneurs ▪ Evidence On Mobile Use By SMEs ▪ Consumers' attitudes towards online and mobile banking ▪ Mobile phones and the informal Economy	▪ A Survey Approach ▪ Systematic Review Methodology ▪ Questionnaires ▪ Questionnaire, Face To Face Interviews And Focus Group Discussions ▪ Interviews And Secondary Data Analysis ▪ Case Study	▪ Activity And Gender Theories ▪ TAM ▪ Innovation Diffusion characteristics ▪ Decomposed theory of planned behaviour ▪ Consumer behaviour, attitude and motivation, subjective norm, control factors ▪ UTAUT ▪ Innovation System conceptual framework ▪ (TOE framework,	▪ Africa (5:12) ▪ Asia (2:5)

Table 2: E-Commerce and Mobile Commerce In Developing Countries

2.6 E-Commerce business models

A business model is a unit of analysis, offering a systemic perspective on how to do businesses, encompassing boundary-spanning activities and focusing on value creation as well as on value capture (Zott et al., 2011). Rayport and Jaworski (2001) state that a business model should specify (i) a value proposition or a value cluster for targeted customers; (ii) a scope of market space offering, which could be a product, service, information, or all three; (iii) a unique, defendable resource system – that is, the associated resource system to deliver the benefits; (iv) and a financial model which includes a firm's revenue models, shareholder value models, and future growth models. Chesbrough and Rosenbloom (2002) focus on the functionalities of a business model and identify the following: (i) articulating the value proposition; (ii) identifying a market segment; (iii) defining the structure of the firm's value chain; (iv) specifying the revenue-generation mechanisms(s) for the firm; (v) describing the position of the firm within the value network; and (vi) formulating a competitive strategy to gain advantage over rivals. Pateli and Giaglis (2003) summarise a business model as consisting of both vertical and horizontal frames as depicted in Figure 4.

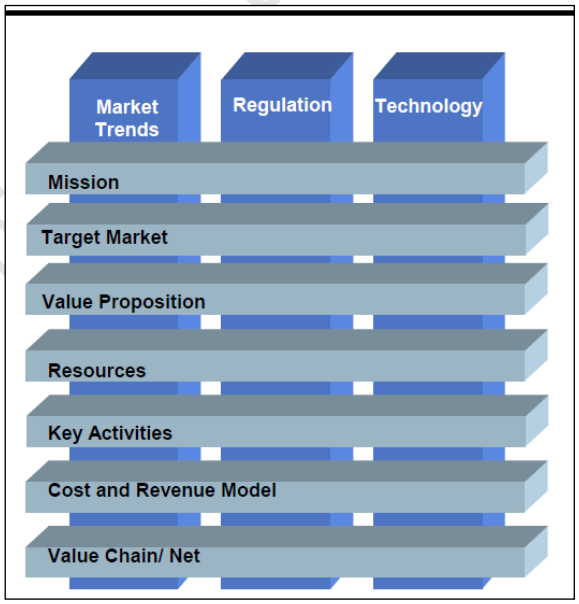


Figure 4: Business model components framework (Pateli & Giaglis, 2003, 339)

The horizontal frame consists of the primary components of the mission to describe the strategic objectives of the organisational model; the target market for scoping and knowing the market segment; a value proposition so as to understand the product/ service

offering; resources to identify organisational capabilities and assets; key activities to understand the intra- and inter-organisational functions; a cost and revenue model such as cost and revenue streams and pricing policy; and value chain/net to understand alliances and partnerships.These primary components work in the wider business and social environment of a business model's implementation, such as market trends, regulation, and technology categorised under the vertical frame (Pateli & Giaglis, 2003).

Lumpkin and Dess (2004) identified four Internet activities that add value, as shown in Figure 5. The search activity refers to the process of gathering information and identifying purchase options; the evaluation activity refers to the process of considering alternatives and comparing the costs and benefits of various options; the problem-solving activity refers to the process of identifying problems or needs and generating ideas and action plans to address those needs; and the transaction activity refers to the process of completing the sale, including negotiating and agreeing contractually, making payments, and taking delivery.

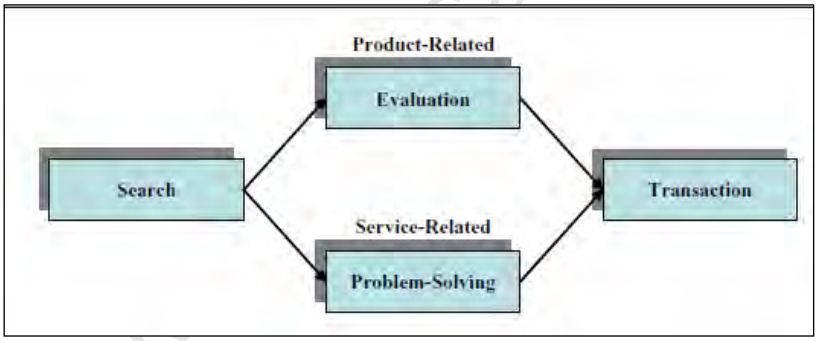


Figure 5: Internet activities that add value (Lumpkin & Dess, 2004, 162)

Wirtz et al. (2010, 275) presented a coherent 4C typology (Figure 6) of content, commerce, context and connection which they refer to as 'straightforward yet holistic and exhaustive, covering the vast majority of classical business activities on Internet markets'. The content typology business models focus on the collection, selection, compilation, distribution, and/or presentation of online content. The commerce typology business model focuses primarily on the initiation, negotiation, payment and delivery aspects of trade transactions using online media, such as Amazon and Dell. Companies focusing on this type of business model use electronic Internet-based processes to substitute or support traditional transaction functions and arenas, creating direct revenue

streams in the form of sales revenues, as well as indirect revenue streams such as commissions.

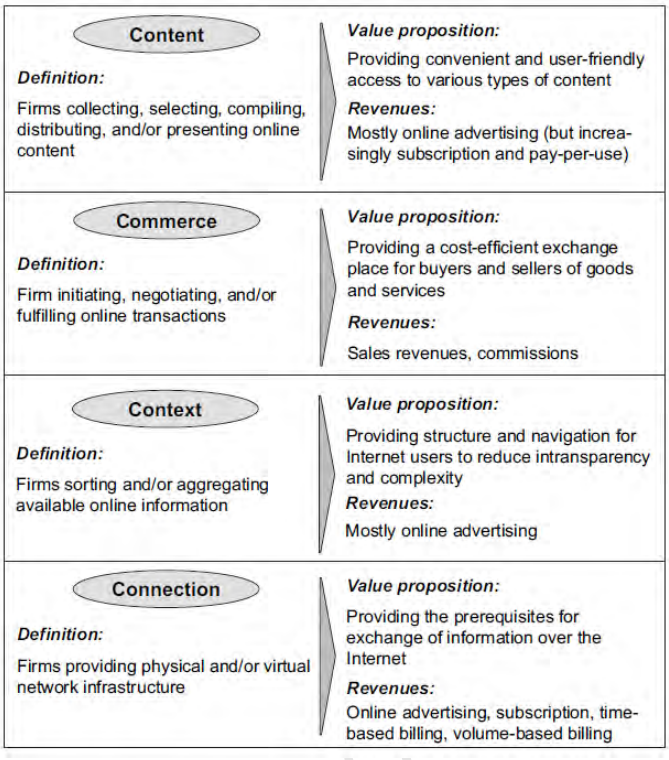


Figure 6: The 4C typology of Internet business models (Wirtz et al., 2010, 275)

Context-oriented business models such as Google focus on structuring information already existing on the Internet, rather than creating new content with the purpose of increasing transparency and reducing complexity so as to help Internet users navigate through the abundance of websites and identify those that fit their specific needs. Connection-oriented business models provide the network infrastructure that enables users' participation in online networks, either on a physical 'interconnection' level or a virtual 'intraconnection' level in which providers offer Internet communication services such as emailing or instant messaging. Wirtz et al. (2010) who note 'that the recent new wave of significant changes in the ways Internet users and companies utilize the World Wide Web, coined the umbrella term 'Web 2.0' in 2005 which has since attracted great interest in the business press' and created the need for a critical reflection of the current business models. There is some consensus that to remain competitive firms must continuously develop and adapt their business models to suit this new change in the Internet use. This is because the 'Web 2.0 trends and characteristics are changing the rules of the 'create and capture value' game, and thus significantly disrupt the effectiveness of established Internet business models' (Wirtz et al., 2010, 272). Shang et al.

(2009) identified five business models of Web 2.0 applications depicted in Figure 7. In the exchanger model, Web companies provide an exchange platform which enables users to exchange their information with one another. Users exchange their written or voice messages via peer-to-peer methodology and, in normal conditions, other concurrent users on the same platform cannot get access to the data. The key success factor for this model is client population, because newcomers always like to join the platform with the most existing members.

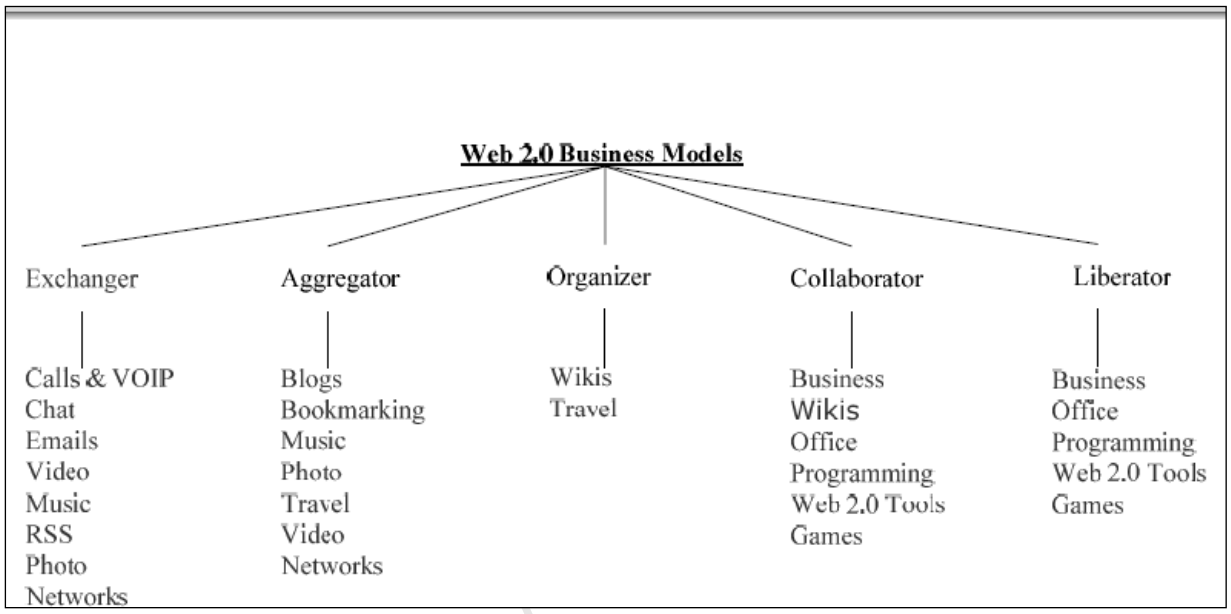


Figure 7: The model of categories of Web 2.0 business models (Shang et al., 2009, 317)

In the aggregator model, Web companies provide a storage platform for sharing users' information and knowledge in a single space that is easily accessible over the Internet. Examples are companies such as Wikipedia and Answer.com that organise existing information on the web sourced from customers, publishers, or elsewhere. Every contributor is an owner of the knowledge content. The source of income for such companies is mainly from sales of organised data. Web companies that follow the collaborator model offer a software development platform so that users can develop application programs for themselves and share them with others. Another model, the liberator, consists of open-source communities such as WordPress and Linux which allow users to download free software which they can then modify to meet their operational needs Shang et al. (2009).

2.7 Factors influencing the evolution of E-Commerce

Literature on E-Commerce in developing countries – and LDCs in particular – is obscure and uncertain because it is is still evolving and generalisable evidence remains lacking (Rodríguez-Ardura et al., 2008). As a result researchers have dwelt on understanding the factors that affect and shape E-Commerce, especially in SMEs. Understanding the SME context and what influences users to either reject or accept and successfully implement an innovation 'is crucial because all other outcomes such as satisfaction and impact are predicated upon use of the system' (Agarwal & Prasad, 1997, 560) and 'once inhibitors of innovation are identified, their effect is understood and action is taken to eliminate them, then the natural flow of innovation will be re-established' (Hadjimanolis, 1999, 562). The literature on E-Commerce adoption identifies constructs of organisational and environmental characteristics as factors that influence adoption.

2.7.1 Organisational factors that affect E–Commerce

The organisational construct describes the organisation characteristics in terms of demographics, perceptions with regard to E-Commerce and how ready the organisation is in terms of resources such as finance, technology and expertise to adopt and use an innovation such as E-Commerce to improve competitiveness.

2.7.1.1 Organisational demographics

The demographics of the organisation pertain to its size, as well as the gender, age and education of its consumer population, while product or service characteristics also affect adoption and usage behaviour (Simmons et al., 2008). The organisational size has been identified as one of the predictors of an organisation's intentions to adopt IS innovations on the premise that larger firms have a greater need for them, as well as resources, skills and experience and the ability to survive failures , than smaller firms (Ramdani et al., 2009). Organisations that are small in size - like SMEs – tend to lag behind their larger counterparts because of the scarcity of resources needed to initiate the deployment of new information technologies required for the initial set-up and sustenance of E-Commerce (Teo et al., 2009), and because of the smaller volumes of transactions that they conduct (Gibbs et al., 2002; Dholakia & Kshetri, 2004; Windrum & de Berranger, 2002). Uzoka

(2008) reports that in Botswana organisational size contributed positively to the adoption of E-Commerce. Contrary evidence from China, however, is reported by Liu (2008) where firm size appeared to be a non-significant factor.

Harris and Davison (1999) report that gender is an important element in the way E-Commerce becomes adopted because 'men and women differ in their beliefs regarding the use of information technology-related innovations, including E-Commerce' (Van Slyk et al., 2010, 17). Uzoka (2008) finds that gender impacts negatively on the adoption of E-Commerce. This could be because women often face a culture that takes them less seriously and operates with networks they are excluded from and with norms of aggressive competitive behaviours that are often seen as unbecoming for women (Brown, 2001). They thus tend to find it more difficult to attract finance, despite the universal non-discriminatory policies (Sandberg, 2003; Carter, 2000; Carter & Rosa, 1998). 'If women do get the opportunity to access the Internet, they 'are indeed more concerned with online payment issues than are men' (Buff et al., 2007, 11) because women are more concerned about privacy and the security of networks (Shade, 1998), vendor trust issues and customer relations than are men (Buff et al., 2007). Van Slyk et al. (2010) found that gender does moderate the influence of beliefs on use intentions in the context of E-Commerce, but that relative advantage is often more important for men whilst compatibility is more important for women. They explain that compatibility serves to reduce the risk of adopting a new innovation that could potentially not fit well with existing values, ideas, and practices Men seem to be risk takers who are influenced by their perceptions of perceived usefulness.

Age was also perceived as a factor in ICT use. The older an individual access to different forms of ICT and confidence in using some applications decreased (Albion et al., 2011). However, age and gender factors can be erased through education and experience (Colley & Comber, 2003; Sagi et al., 2004). The level of education an individual has achieved is seen as an important aspect of an organisation's development. For example, managers who enjoy learning have high self-confidence levels and experience of the technology, are more likely to adopt an innovation than those with low self-confidence (Peansupap & Walker, 2005). Management and staff members who have had prior experience of using a

similar innovation are more likely to adopt the new innovation than those without this experience (Brown et al., 2004).

Finally, the product or service being offered by the organisation has a direct influence on E-Commerce adoption because the Internet only 'addresses two of the five senses – sight and sound – which consequently constrains the type of products that are suitable for selling online' (Simmons et al., 2008, 361). This explains why a number of businesses in developing countries in the tourism sector, a more information-intensive enterprise are using E-Commerce as compared with other forms of businesses.

2.7.1.2 Organizational Perception

Awareness refers to the perception of E-Commerce technologies by the organisation's owner. Molla and Licker (2005, 882) define it as the 'perception of eCommerce elements in the environment; comprehension of their meaning through an understanding of eCommerce technologies, business models, requirements, benefits and threats and projection of the future trends of eCommerce and its impact'. Perception of technologies is usually investigated by using the diffusions of innovations theory to help understand the effect of innovation factors on E-Commerce adoption. Five factors have been outlined to affect E-Commerce adoption, as explained below.

2.7.1.2.1 Perceived relative advantage

Relative advantage is the degree to which an innovation is perceived as better than the idea it supersedes (Rogers, 2003). It describes the degree to which an innovation provides relative advantage over existing ways of meeting the need (Fuchs et al., 2009). According to Rogers (2003), the relative advantage of an innovation, as perceived by members of a social system, is positively related to its rate of adoption. AlSukkar and Hasan (2005) found that perceived relative advantage does influence the attitude toward using an innovation. In the E-Commerce literature, perceived relative advantage as measured by perceived benefits and impact was an important technological factor influencing the E-Commerce adoption decision by SMEs (Scupola, 2009). Management's failure to perceive

the benefits ultimately leads to 'underestimate the impact of E-Commerce and prefer to be followers rather than leaders in the adoption of EC technologies' (Kaynak et al., 2005, 638). In Iran, Abbasi et al., (2010) found that perceived usefulness was on of the critical success factors with the highest impact on the successful adoption of e-commerce by SMEs. Jianyuan et al. (2009) found relative advantage affected adoption intention of organisations in China. Similar findings are reported by Ghobakhloo et al. (2011). Igau et al. (2011) concur, and advise non-business establishments – such as academic institutions, non-profit organisations, religious organisations and government agencies – that wish to enhance the usage of E-Commerce to focus on its relative advantage.

2.7.1.2.2 Perceived Cost

Relative advantage, however, requires the consideration of the costs involved in respect of the adoption of technology, for example, for hardware, software, Internet access, or the availability of alternative technologies and developmental innovations (Ho et al.,2007; Iddris 2012). Such costs are usually exorbitant for SMEs and have been the main impediment to E-Commerce adoption (Othman et al., 2010). For example, the cost of developing E-Commerce in-house can be very high. This is often due a lack of experience and sufficient expertise, resulting in delays (Igau et al., 2011). The costs tend to be perceived higher when the technology to be implemented is perceived as being complex.

2.7.1.2.3 Perceived Complexity

Innovation complexity is defined as the degree to which the innovation is perceived as relatively difficult to understand and use (Rogers, 2003; Othman et al., 2010). The more difficult an innovation is to understand and more difficult to implement, the less likely will be adopted, but if less complex, a faster adoption is predicted. Teo at al. (2004) report that perceived complexity is one of the factors that affect SME adoption of E-Commerce. In Sweden and Australia, regional SMEs describe E-Commerce implementation as too difficult for the business because it is too complicated to implement, and report that they faced difficulties in obtaining funds to implement E-Commerce and in deciding which standard to implement because of the large range of E-Commerce options, and the lack of

technical knowledge regarding its implementation and issues of security (MacGregor & Vrazalic, 2005). In Bangladesh, for example, just as in most developing countries, perceived complexity is one of the significant factors that affect SMEs willingness to adopt E-Commerce (AlNoor & Arif, 2011). This is because ICTs are still relatively new, and 'organizations normally face scores of problems in operating business and transacting through internet' because of the perceived complexity of operating online (AlNoor & Arif., 2011, 55). Complexity thus has negative effects on E-Commerce adoption (Alam et al., 2008). This can, however, be reduced when individuals are regular users of the Internet because users become comfortable and develop self-efficacy with regard to Internet usage (Hernandez et al., 2009). More recent studies support these findings and confirm that 'complexity plays a role in the motivation or inhibiting of E-Commerce adoption by SMEs' (Bao & Sun, 2010, 174).

2.7.1.2.4 Perceived compatibility

Despite the perceived complexity and cost involved in adopting an innovation, if it is perceived to be compatible with the organisation's strategy it can be adopted. Compatibility of an innovation refers to 'the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters (Rogers, 2003). There have been reports on a positive relationship between perceived compatibility of an innovation and the rate and scope of its adoption. For example, Teo et al. (2004) identify compatibility as one of the factors affecting SME adoption of E-Commerce. In Sweden and Australia, regional SMEs describe E-Commerce as unsuitable to SME's products/services, its way of doing business, and its client's way of doing business, as well as the lack of perceived advantages of E-Commerce implementation (MacGregor & Vrazalic, 2005). Alam et al. (2008) also found that compatibility has a positive and significant influence on E-Commerce adoption. The same results are reported by Ghobakhloo et al. (2011), AlNoor and Arif (2011), and more recently by Huy et al. (2012) , all of whom found perceived compatibility to be an important predictor for E-Commerce adoption by Vietnamese SMEs. Organisations in most developing countries face a greater challenge in that international technology developed by overseas companies under a foreign environment may not be compatible

with the manufacturing facilities of the adopting firm' (Au & Enderwick, 2000, 270). This is because compatibility calls for an assessment of the technology relative to a user's values and experiences in the operating context and the 'effective transfer of a technology requires a consideration of its compatibility with the functions to be performed' (Kshetri, 2010, 162). The context in which businesses in LDCs operate is characterised by poor resources and infrastructure and regulatory constraints that could impact, and often reduce, the anticipated economic benefits from the adoption, thereby creating a negative attitude towards adopting the technology (Au & Enderwick, 2000; Chin & Gopal, 1995).

2.7.1.2.5 Image

Finally, image is one of the factors that influence the diffusion of an innovation (Carter & Belanger, 2003), and is a critical element to the establishment of the customer's perceived level of trust with regard to that innovation (Lowry et al., 2008). Zhang et al. (2011) formulated and tested a model to explain B2C user repurchase intention. They found online relationship quality was positively influenced by perceived vendor reputation. Hua et al. (2009) propose a model that indicates that delivering high quality service and creating superior customer value can result in high customer satisfaction, thus affecting the firm's corporate image and, ultimately, leading to consumer retention. According to Chang and Tseng (2011, 1), 'online retailers hoping to make profits, it is imperative that they establish a positive online image to attract consumers searching for information and subsequently to persuade consumers to make purchases'. Image has mainly been investigated using the psychological factor of perceived risk. From this perspective, it refers to when 'using the service will lower a consumer's self-image and self-concept' (Kuan et al. 2011, 2).

2.7.1.3 Organizational Readiness

2.7.1.3.1 Human resources

Human resource 'refers to the availability (accessibility) of employees with adequate experience and exposure to information and communications technology (ICT) and other skills (such as marketing, business strategy) that are needed to adequately staff

eCommerce initiatives and projects' (Molla & Licker, 2005, 882). The experience and the knowledge that organisations have about E-Commerce play an important role in decisions regarding adoption, as they provide them with the ability to see this as a new opportunity that they can use to gain competitive advantage (Teo et al., 2004). Organisations with the necessary ICT expertise have a greater propensity to adopt E-Commerce than those without (Nnafie, 2002). ICT workers are a critical resource on the African continent because, 'given the historical handicaps and the current infancy of Africa's ICT sector.... the continent's future is dependent upon the ability to develop the people's skills to cope with the rapidly evolving needs of the ever changing global and national environment' (President of the United Republic of Tanzania, 2006, http://www.tanedu.org/presidentkikwetestatement_microsoftglfafrica.pdf). For example the lack of right technical skills was found to be a hindrace to E-Commerce adoption and implementation in Ghana's SMEs (Iddris 2012). Vietnam SMEs also found ICT skills a hindrance specifically in recruiting qualified staff and retaining them (Van Huy et al., 2012). Unfortunately, ICT-related skills are very difficult to acquire as there are few institutions dedicated to ICT training in LDCs (Senzige & Sarukesi 2003). The training is further hampered by limited resources such as computers and Internet access. Learners often rely on public ICT facilities such as telecentres, cybercafés, and information access points which make the access possible because of the more affordable costs associated with sharing as compared with individual home ownership of ICTs and individual network use fees (Colle & Yonggong, 2002).

2.7.1.3.2 Technological infrastructure

E-Commerce is not possible without an IT infrastructure that is reliable, accessible, and high-speed. This includes a telecommunication infrastructure, networks, Internet services, hardware and software (Lin et al., 2010). In short, 'it is the ICT base of an organization and the extent of computerization, the flexibility of existing systems and experience with network based applications' (Molla & Licker, 2005, 882). E-Commerce technologies must appear affordable to an organisation, especially to SMEs. According to Bao and Sun (2010, 173), 'organizations with more required technology resources may have greater ability to use E-Commerce'. The level of IT sophistication, usage and management within

an organisation could lead to positive attitudes and behaviour towards E-Commerce adoption (Pham et al., 2010). For example, organisations that already maintain electronic links with business partners through electronic means would be more readily inclined to adopt new technological innovations so as to leverage maximum benefits from their exploitation (Raymond & Blili, 1997; Shiels et al., 2003).

2.7.1.3.3 Management commitment

Management commitment 'reflects enough energy and support for eCommerce from all corners of an organization and especially from the strategic apex' (Molla & Licker, 2005, 882). Top management support and commitment is a key organisational component that has often been considered crucial in the adoption and deployment of E-Commerce, as they provide the financial resources necessary for E-Commerce and for cultivating an organisational climate conducive to its adoption (Teo et al., 2009). Lucas (1976, 20) explains that "management commitment...is needed since management provides leadership and rewards to members of the organization." Management is also responsible for monitoring the efficiency of E-Commerce technologies (Hashim et al., 2010) essential for the achievement of organisational goals, values and beliefs. Soliciting such support is critical to the success of IT investments in E-Commerce (Lin et al., 2010). Yu et al. (2010) found that top management commitment is extremely important at both its initial adoption and institutionalisation. Wang and Lin (2009) agree, and state that management support was one of the important factors for consideration for the successful implementation of B2B E-Commerce in SMEs. The diffusion of E-Commerce in SMEs in the United Kingdom was influenced by five factors, one of which being top management support (Wilson et al., 2008). These results are supported by Jianyuan et al. (2009), who found top manager support to have a significant positive affect on the adoption intention of organisations in China. It does; however, seem that when E-Commerce adoption appears too complex to implement and sustain for an organisation, there is limited top management support for it (Kurnia & Ali, 2012; Iddris, 2012).

2.7.1.3.4 Governance

The task of managing IT infrastructure and resources continues to grow more complex as businesses rely more and more on it. This complexity requires governance – a framework for making strategic, tactical and operational decision regarding rights and accountabilities, and stipulating clearly who is entitled to make major decisions, who has input and who is accountable for implementing those decisions, so as to encourage desirable behaviour in the use of IT (Liu et al., 2010; Molla & Licker, 2005). Appropriate governance and the adoption of best governance practices enables organisations to ensure that their enterprise's IT sustains and extends their strategies and objectives (Posthumusa & von Solms, 2005; IT Governance Institute, 2007), and fully harnesses the benefits of IT investments (Othman et al., 2011). Devos et al. (2009) contend that IT governance in SMEs is still immature and there is a lack of SME-centred theories that can lead to general inferences about how SMEs should conduct such governance. In their more recent work they show that matters of trust are slightly more important than control issues, such as output-based contracts and structured controls in the governance of IT in SMEs (Devos et al., 2011). Issues facing SMEs in implementing IT governance include, but are not limited to, the lack of guidelines on how to implement IT governance, limited financial and human resources, an inability to accept so many changes accrued by different frameworks that could potentially make their organisations bureaucratic and may result in the loss of their core tasks (Ayat et al., 2011).

2.7.2 Environmental factors that affect E-Commerce

Environmental factors focus on 'government laws and regulations, social structure, national policies, technical change and the natural environment that directly impact the companies' (Lin et al., 2011b, 6366). Molla and Licker (2005, 878) define external factors to include 'market forces, the government, and other supporting industries'. Business organisations in countries are differentiated by the external environments they face, while their successes are demonstrated when a good fit is achieved between its external environment and its structural characteristics (Parker, 1995).

2.7.2.1 Market forces e-Readiness

Market forces e-Readiness refers to the application and use of E-Commerce by a firm's competitors, customers, suppliers, and other business partners (Zhai, 2011). It is the assessment that an organization's business partners such as customers and suppliers allow an electronic conduct of business (Molla & Licker, 2005, 882). It also pertains to demographics, measured by population composition and income (Xu, 2008). Prior to making a business decision and strategising, an organisation needs always to consider the readiness of the market (Lin et al., 2011a). If they perceive market forces as ready for E-Commerce they are likely to adopt E-Commerce on more sophisticated level (Zhai, 2011).

One of the market force determinants for E-Commerce is consumer demand to buy online (Al Ghamdi al., 2011). Consumer purchasing power and the country at large in terms of its GDP are a key determinant of E-Commerce diffusion rates across countries. Consumer size and the ability of an organisation to convert habitual users of the Internet to customers is particularly important since size positively influences the development of E-Commerce (Rodriguez-Ardura et al., 2008). Of course converting traditional non-web users into web users is a difficult task because E-Commerce is still perceived by entrepreneurs and ordinary citizens as a luxury for highly industrialised countries. It is thus often perceived as a distant objective (AlNoor & Arif, 2011). This is partly due to a lack of awareness of its potential that has not yet been fully understood due to a failure to anticipate its implications.

Competitive pressure as a market force determinant for E-Commerce results from a threat of losing competitive advantage (Ghobakhloo et al., 2011). Lin et al. (2011a) indicate the loss of competitive advantage is as a result of competitors being able to provide more value to the customers at the lower price. As such, competitive pressure is identified as one of the external drivers of companies investing in technology with the intention of gaining that competitive advantage from the benefits accrued from the technology (Mohamed et al., 2009). Some organisations have seen the need to integrate new technologies due to a perceived intense competition in the marketplace, especially SMEs who find competition as one of the main barriers to E-Commerce adoption (Ghobakhloo et al., 2011). For example, Abdulghader et al. (2011) and Yang (2012) report that E-

Commerce technologies provide competitive advantages that are vital in enhancing imperfect markets across firms. Thus understanding one's competitors and the means of obtaining competitive advantage, has become one of the determinant of Information System strategies in commercial organisations. In addition to competitive pressure, trading partners also put pressure on an organisation's competitiveness by requiring their expectations to be met, such as by the presence of an organisational website because it provides credibility in the eyes of potential employees, clients, and suppliers (Mehrtens et al., 2001). Ching et al. (2009) concur, reporting that many organisations have tended to adopt collaborative commerce due to pressure from their industry partners. Some businesses, especially SMEs, will find no reason to adopt an innovation unless there is a specific request for it by their trading partners in the industry sector (Van Akkeren & Cavaye, 1999), or a strategic necessity to maintain competitiveness in the industry (Teo et al., 2004). For example, international trading corporates can positively affect E-Commerce adoption by placing pressure on a country to facilitate the development of E-Commerce by ensuring international rules and norms become institutionalised in the domestic political arena (Gibbs et al., 2002; Cortell & Davis, 1996). The cross-national companies also have the ability to bring global competition to local markets and reduce prices of ICT and E-Commerce-related services. Trading partners must, however, be supported by support-giving institutions, such as change agents, telecommunications, financial institutions, trust enablers and the IT industry, whose activities affect the E-Commerce initiatives of businesses. Thus change agents, such as technology partners and external vendors, try to sell an innovation to the organisation; or government incentives and industry bodies try to initiate growth in the adoption of such innovations by, for example, disseminating knowledge about the innovation across the industry (Teo et al., 2004). The purpose of a change agent is to 'encourage the adoption of new ideas, practices and technologies, but it can also slow down the process and prevent the adoption of certain innovations that are deemed to produce undesirable results' (Duncombe & Molla, 2006, 4). According to Duncombe and Molla (2006), change agents in developing countries manifest themselves in the form of private or public sector organisations, for-profit or not-for-profit intermediaries or market actors. They operate at a macro level where they can enact policy and regulation in a way that will improve the enabling environment for SMEs; at a meso level, where they influence clients more directly such as creating

awareness based on a need for change on the part of the client; and at a micro level where they aim to exploit formal and informal ties and networks for the purpose of overcoming resource deficiencies and other impediments to innovation.

2.7.2.2 Institutional e-Readiness to support E-Commerce

Institutional e-Readiness refers to 'organizations' assessment of the preparation of the nation state and its various institutions to promote, support, facilitate and regulate E-Commerce and its various requirements' (Molla & Licker, 2005, 882). According to Lin et al. (2011b), companies cannot succeed without government creating a supportive environment for E-Commerce adoption that focuses on policies, legal environment, and socio-cultural infrastructure. Shemi and Procter (2013) found that for E-Commerce in SMEs to flourish in a developing country like Botswana, there needs to be improved e-commerce policy forumulation. Government policies have been reported as an important determinant of IT adoption, especially those relating to improving telecommunications infrastructure, cost and service, a fair tax policy for online transactions, financial incentives, a national E-Commerce strategy, enhancement of government E-Commerce use, and the provision of E-Commerce training (Zhu & Thatcher, 2010). The liberalisation and privatisation of the telecommunication sector have been deployed as strategies to ensure growth in the telecommunication and ICT sector in developing countries. The liberalisation of the telecommunication sector can result in an increase in competition necessary for the reduction of high prices associated with international leased lines, as well as the elimination of barriers to the entry of foreign investors whilst providing technical expertise and human resources necessary to support the growth of the industry (Wilson & Wong, 2003; Petrazzini & Kibati, 1999). Most basic services have been non-existent in LDCs because the providers of basic services remain in the state monopolies (Hamilton, 2003). There can, through privatisation, be an increase in competition in international telephone traffic; a reduction in international network costs; and some improvements in the form of penetration of the telephone system to rural areas (Petrazzini & Kibati, 1999). Competition can lead to the elimination of international E-Commerce barriers, such as long server response times and lower transactional capability which inhibit global competition (Travica & Olson, 1998; Gibbs et al., 2002). The

advantages of competition as a result of liberalisation are strongly felt in the mobile sector which has flourished in Africa, and is seen as a substitute for fixed wire lines where penetration (teledensity) is low (Hamilton, 2003).

Despite the liberalisation process, a number of studies have highlighted that developing countries and LDCs in particular do not have the right conditions for advanced forms of E-Commerce because they lack institutional trust (Zhu & Thatcher, 2010). For example Iddris (2012) indicated that Ghana's SMEs failed to succesfuly impeliment E-Commerce due to a lack of developed legal and regulatory systems that can instill institutional trust. Institutional trust is needed for consumers and business to have confidence in the rule of law to ensure successful secure online transactions (Jennex et al., 2004). The rule of law consists of both formal rules, such as a legislative and regulatory environment (political and judicial rules, economic rules and contracts), created by government; and informal rules that describe and coordinate repeated human interaction and are an extension, elaboration and modification of formal rules. Informal rules manifest themselves in three forms , namely, unwritten constraints that have evolved from formal rules in the context of repeated interactions (exchange) among players; socially sanctioned norms of behavior; and internally (individual) enforced standards of conducts like giving up wealth maximisation due to integrity, honesty and reputation (Nkya, 2003; Nelson & De Bruijn, 2005). Both institutional formal rules and informal constraints influence economic and social practices or behaviours and play a central role in the process in which organisations must effectively manage dependencies and the resulting power influences between organisations in order to acquire and maintain critical resources (Dickson et al., 2006). The lack of confidence in the rule of law slows E-Commerce adoption in the countries with unstable political and weak regulatory systems that are unable to adequately regulate rights and obligations in the electronic space (Boateng et al., 2008, Zhu & Thatcher, 2010). In addition, the lack of confidence is brought about by the existence of corruption. For example, 'Ojukwu (2006) identifies Nigeria as a country where fraudulent activities such as Advance Fee Fraud has built a generation of techno-sceptical entrepreneurs and these attitudes negatively affect SMEs' (Apulu et al., 2011). Thus corruption is one of the factors that inhibit the effective utilisation/adoption of sophisticated ICT solutions among SMEs in developing countries (Apulu et al., 2011).

2.7.2.3 Socio-cultural factors

Social factors are concerned with informal regulations and are also implicated in the rapid adoption of E-Commerce (Lin et al., 2011). For example, websites in Vietnam are perceived as being 'merely places for promotion; not for purchase' because 'Vietnamese consumers are used to the practice of seeing and touching before buying' (Van Huy et al., 2012).One of the social factors to affect E-Commerce is language in content creation. Mansell (2001) and Gattiker et al. (2000) identify differences in language and work habits as one of the barriers to people using E-Commerce. The majority of the content of the World Wide Web is produced in the English language, creating a barrier for many potential users in LDCs, especially those in African states whose first and second languages are not English (Molla et al., 2006). There are attempts to have local content in these countries, but Jennex et al. (2004) warn that 'simply translating documents does not ensure the translation will contain the same cultural meaning as the original script'. Molony (2008) found that despite the huge uptake of ICT-related technologies such as mobile phones in particular, some traditional pre-ICT aspects of the African business culture are set to remain for some time. Culture is therefore one of the social factors that is a stumbling block to the advancement of E-Commerce in developing countries. The role of culture in the adoption of technology has been widely studied, revealing that because many of its aspects are not culturally neutral (Sagi et al., 2004). Five dimensions of culture have been investigated by Hofstede (1991, 1993). These include individualism, uncertainty avoidance, long-term orientation, power distance, and masculinity (Dwivedi et al., 2009).

2.7.2.3.1 Individualism–collectivism

According to Hofstede (1983, 79), 'the fundemental issue involved in "Individualism versus Collectivism" is the relation between an individual and his or her fellow individuals'. It 'reflects the position of the culture on a bipolar continuum' (Hofstede, 1984, 419). Individualism is the degree to which a society emphasises the role of the individual. The members of such societies tend to be independent (Yoon, 2009), more competitive and goal-oriented (Frost et al., 2010). In contrast, a collectivist society is

concerned with affiliating closely with others, maintaining connectedness, and blending the self/other boundary (Park & Jun, 2003). Individualism–collectivism is seen as the most significant cultural dimension that impacts and explains trust-building web strategies across cultures and is a major predictor of Internet shopping rates (Sia et al., 2009) because social factors like social pressure and social expectations can be an important positive influence on Internet use and online behaviour (Fusilier & Durlabhji, 2005). Most individualistic societies, which tend to be Western–oriented, have gone beyond any cultural barriers related to the use of ICTs in their communication, and when there is a lack of institutional trust they do not find online buying as risky when compared with members of a collectivist society (Cyr, 2011). Online consumers are thus more individualistic than those who have not shopped online. One possible explanation for this is that 'Internet access and activity remains a highly individual and personal experience that lacks the human warmth that conventional face to face interactors can take for granted' (Frost et al., 2010, 7). Because individualistic individuals would still shop online, despite the lack of institutional trust, Yoon (2009) found that individualism had no significant effect on trust and an intention to use E-Commerce. SMEs at lower growth stages of E-Commerce adoption, for example those belonging to Chinese-born owners in New Zealand, were highly rated on individualism, while those firms at a higher growth stage of commerce adoption are highly rated on collectivism (Chen & McQueen, 2010). Gupta et al. (2010) report on the importance of considering cultural differences when conducting global E-Commerce because there are significant differences between consumers with regards to their willingness to disclose personal information, and their intentions and actions for privacy and security protection in an online environment. These authors found that collectivist societies are more willing to disclose potentially sensitive personal information, whilst individualist societies engage in higher passive privacy protection actions because they are less willing to depend on others, seeking power, freedom and individual rights (Lowry et al., 2009).

2.7.2.3.2 Uncertainty avoidance

The fundamental issue with uncertainty avoidance is 'how society deals with the fact that time runs only one way; that is, we are all caught in the reality of past, present and

future, and we have to live with uncertainty because the future is unknown and always will be' (Hofstede, 1983, 81). Uncertainty avoidance is the degree to which people feel threatened by uncertain, unstructured situations and ambiguity (Yoon, 2009). It is the 'extent to which people feel threatened by ambiguous situations, and have created beliefs and institutions that try to avoid these' (Hofstede, 1984, 419). Uncertainty avoidance was the most influential national culture value affecting consumer E-Commerce acceptance and had a direct effect on an intention to use it in China. It was found that in cultures with high uncertainty avoidance, people may make less use of online shopping (Yoon, 2009). Uncertainty avoidance had the most direct bearing on E-Commerce adoption intentions in Chile because E-Commerce brings structural changes and requires the redesign of organisations which most collectivist societies may not be as comfortable with as may individualistic societies (Grandón et al., 2011). Similar findings reported by Singh et al. (2008) reflect that uncertainty avoidance is one of the cultural values that affect U.S. Hispanic web content preferences.

2.7.2.3.3 Long-term orientation

Long-term orientation refers to a fostering of virtues oriented towards future rewards (Yoon, 2009). It is 'the extent to which a society exhibits a pragmatic, future-oriented perspective rather than a conventional historic or short-term perspective' (DeMooij & Hofstede 2002, 64). As a result, societies with higher long-term orientation values tend to persist and persevere and are reluctant to adapt to new circumstances (Kao, 2009). Long-term orientation is an important cultural value which has been shown to affect the behaviour of individuals meaningfully (Hassan et al., 2011). For example, Yoon (2009) indicates that long-term orientation impacts E-Commerce acceptance in China. Cultures with long-term orientation place emphasis on building relationships and, thus, trust is a core factor in forming those relationships and a prerequisite to the acceptance of E-Commerce (Yoon, 2009). According to DeMooji & Hofstede (2002, 64), 'longterm oriented cultures are particularly found in East Asia and value acceptance of change, perseverance, thrift, and pursuit of peace of mind. Short-term orientation is found in the Western world'.

2.7.2.3.4 Power distance

Power distance refers to the degree to which the less powerful members of organisations accept the unequal distribution of power (Hofstede, 1984). 'The fundamental issue involved is how society deals with the fact that people are unequal' (Hofstede 1983, 81).Societies with higher values of power distance are ones in which there is a considerable dependence of employees on bosses and where employees are unlikely to approach and contradict their bosses directly (Gupta et al., 2010), thereby breeding a culture of low trust in others due to this inequality in power distribution (Lie et al., 2010). According to Hofstede (1983), many countries in the third world are characterized by higher Power Distances and that 'It is part of their expectations that leaders lead autocratically, and such subordinates will, in fact, by their own behavior make it difficult for leaders to lead in any other way' Hofstede (1983, 87). In Saudi Arabia, for example, authoritarian decision-making styles are likely to dominate (AlShohaib et al., 2009), and this could affect expert system-based trust which is important in online operations. Such trust, however, is a modern concept, and does not work in a traditional setting, such as the Arab system of trust which is selective, differentiated, and complex (Fandy, 2000). Yoon (2009) found that power distance had no significant effect on trust and an intention to use E-Commerce, possible reason could be that customers in high power distance societies may regard online shopping as an authoritarian value (Yoon, 2009). However, it was a significant cultural value that affected U.S. Hispanics web content preferences (Singh et al., 2008). SMEs operated by Chinese-born owners in New Zealand were also found to exhibit high power distance, and their attitude toward E-Commerce technology directly influenced their firms' E-Commerce growth process (Chen & McQueen, 2010).

2.7.2.3.5 Masculinity and Feminity

Masculinity refers to the degree to which a society emphasises traditional masculine values (such as competitiveness, achievement and ambition), as opposed to feminine values (such as nurturing, helping others, and valuing quality of life) (Hofstede, 1984). According to Hofstede (1983, 83) 'the fundamental issue involved is the division of roles between the sexes in society. All socie ties have to deal with the basic fact that one half of mankind is female and the other male'. Masculine cultures tend to emphasise work, and

material accomplishments are seen as being relatively more important than human relationships (Gupta et al., 2010). Yoon (2009) found that masculinity had a moderate effect on the relationship between perceived usefulness and intention to use E-Commerce, and the relationship between perceived ease of use and intention to use E-Commerce.

2.7.2.4 Supporting industry e-Readiness

Supporting industries e-Readiness refers to the 'assessment of the presence, development, service level and cost structure of support-giving institutions such as telecommunications, financial, trust enablers and the IT industry, whose activities might affect the E-Commerce initiatives of businesses in developing countries' (Molla & Licker, 2005, 882).

2.7.2.4.1 Telecommunication infrastructure

Basic national ICT infrastructure is an important element for investors and businesses because, without the necessary infrastructure, businesses find it difficult to migrate from traditional markets to E-Commerce (Brown & Thompson, 2011; Eoxley & Yeung, 2001). Janom and Zakahria (2009) found that factors relating to reliable Internet technology infrastructure, reliable logistic services and universal communication standards and protocols to support the existing and future B2B E-Commerce activities in SMEs were highly important. Unfortunately, the IT industry for most developing countries is not sufficiently developed and is characterised by a lack of a robust fixed telecommunication sector (Zhai, 2011). For example, SMEs in Malaysia faced E-Commerce basic infrastructure challenges, specifically with regard to security concerns, online payment issues, Internet access and technical skills (Mukti, 2000). Kurnia and Peng (2008) found that there was sound telecommunication in developed regions of China but the national infrastructure remained fragmented. This is because technical service systems for most developing countries are a basic national policy of the government (Wang et al., 2010), and tend to be poorly managed, even if in private hands (Aljifri, 2003). Most LDCs, in fact, have a telecommunication infrastructure too unreliable and inefficient to support the conduct of E-Commerce; and these factors play an important role when organisations make the decision to adopt E-Commerce (Zhai, 2011).

There is, however, an increase in the use of mobile devices in developing countries which could reduce some of the high costs of wired infrastructure costs. According to ITU (2009), 74 per cent of all messages globally are now sent through a mobile device. The trend is even higher in developing countries where nine out ten messages go out via mobiles. This is a significant adjustment, given that for many people, communication was perceived as being impossible across distances because they were unable to access ICTs (Meso et al., 2005). Current growth rates in the developing world are rapid, and raise hopes that economic development benefits will arise from the technology (Donner, 2007). Mobile technology has given business the following benefits: developing and accessing new business contacts and new markets, specifically access to rural poor people who have no traditional bank accounts; gaining access to the free flow of price information; allowing the new consumer to top-up mobile phone credits for themselves and their employees; allowing airtime transfers between mobile phones; coordinating supply and demand; and allowing for corporate bill payments (Aker & Mbiti, 2010; Boadi et al, 2007; Abraham 2007; Stafford & Gillenson, 2003; Tveit, 2001). Farmers, fishermen, small taxi operators, and ordinary people are now using mobile phones to perform a number of activities aimed at maintaining social networks with business associates so as to eliminate intermediaries in the value chain (Carmody, 2009; Dholakia & Kshetri, 2004). Mobile phones have become so prominent in developing countries, and in Africa in particular, that people have bypassed full landline telephone services due to the time need to setup a new fixed line and the high cost of connecting individual houses to telephone lines (Must & Ludewig, 2010; Forlin et al., 2008). The increase in adoption is as a result of mobile phones becoming affordable and accessible tools that provide a safe and affordable financial instrument to many poor communities round the world who are typically excluded from formal financial services (Sinha, 2005).

2.7.2.4.2 Technological infrastructure of commercial and financial institutions

Most commercial and financial institutions in developing countries are not mature enough to handle secure and reliable electronic transactions (Zhai, 2011). This is partly because most countries still rely on cash as the most dominant medium of exchange

(Worku, 2010). In Bangladesh, Riyadh et al. (2009) identified the lack of financial institutions's readiness to support E-Commerce as one of the factors that hampered SMEs' adoption of electronic transactions. Same findings are reported in Nigeria (Apulu et al., 2011). In Sri Lanka, SMEs indicated the need to address issues of low bank account and credit card penetration if E-Commerce were to be successful (Kapurubandara & Lawson 2009). Most commercial and financial institutions that are able to provide for the conduct of E-Commerce are plagued by issues of security and privacy which deters most consumers from adoption. Availability of and affordability of Secure electronic transaction (SET) and/or a secure electronic commerce environment (SCCE) service in these countries is limited and most commercial and financial institutions are unable to provide reliable services. However, if policy makers should regulate should provide or develop policies that will facilitate easy adoption of e-commerce in the banking sector, there could be a strong inclination for banks to adopt E-Commerce (Asiabugwa & Munyoki, 2012).

2.7.2.4.3 Local physical infrastructure

Most researchers do not believe that commercial infrastructure, such as electricity and transportation services, significantly affects E-Business value (Okoli et al., 2010). Yet these facilities in most developing countries are generally poorly developed, so much so that they are unable to deliver timeously to meet E-Commerce requirements (Zhai, 2011). For example, effective utilisation and adoption of sophisticated ICT solutions in Nigeria was greatly hindered by the lack of electricity supply (Apulu et al., 2011). The same is reported in Ethiopia, that the lack of 'reliable power supply is a key challenge for smoothly running e-banking' (Worku 2010,6). The development of transportation infrastructure is an important element for the success of E-Commerce in order to avoid the slow and uncertain delivery of goods and services (Abdulghader et al., 2011). Martinsons (2008) and Kurnia and Peng (2008) found in China, for example, that there was a sound transportation infrastructure in developed regions whilst the national infrastructure remained fragmented. Travica (2002) reports on the lack of postal numbers, street names, and transportation systems (narrow, in bad condition, and congested) which

lead consumers to incur high delivery and shipping costs which can deter them from online purchases.

2.8 E-Commerce adoption maturity status

E-Commerce Maturity refers to the 'development and growth, from an initial e-commerce state to an advanced e-commerce state' (Zandi 2013, 67). Several models have been proposed to 'describe the various phases involved in moving towards greater sophistication with the respect to the use and management of Information Systems/Information Technology in the new e-commerce environment' (Gonçalves 2010, 2). Zandi (2013) provides a list of the numerous e-Commerce maturity models that have been proposed in literature. The use of such models allows 'organizations to determine the level of maturity they achieved by comparing their current situation with the stages of maturity described in the model' (Zandi 2013, 67). This is because maturity models take the view that the planning process, development/adoption, use, and management of IS organizations evolve through a learning process that can move through stages of maturity… and if these stages (and their associated features) can be identified, they could then be used to develop a plan for the IS and provide guidelines for action, characterized by orderly progression through several stages from the current culture of the organization (Morais et al 2012, 282). This study uses Molla & Licker (2005)'s E-Commerce maturity model for developing countries.

Molla & Licker (2005, 881) have identified a six-phase E-Commerce status indicator, relevant to the E-Commerce realities of developing countries, namely *no eCommerce, connected eCommerce, static eCommerce, interactive eCommerce, transactive eCommerce, and integrated eCommerce*. Organizations with no E-Commerce status are those that have not considered E-Commerce. Organizations that have connected or have a static E-Commerce have considered E-Commerce but only connected to the Internet with email but no web-site or have a static website that publishes basic company information on the web without any interactivity. These are classified as organization in their initial adoption phase or entry-level adoption. Organizations at the *interactive, transactive, and integrated eCommerce* are organizations whose extent of adoption accepts queries, e-mail and form entry from users; performs online selling and purchasing of products and services

including customer service; and integrates organizational systems with suppliers, customers and other back office systems allowing most of the business transactions to be conducted electronically (Molla & Licker, 2005). These organizations are said to be at the institutionalisation maturity stage of E-Commerce.

2.9 Summary

E-Commerce is not a recent phenomenon, although least developed countries still lag behind developed countries in the adoption of appropriate technologies and enabled applications. This is partly because there have been few studies that pay attention to least developed countries and the issue of context (Kurnia & Peng, 2008). The paucity of such studies has resulted in a generalisation of results from other developing countries which fail to provide a contextual understanding of the E-Commerce phenomena in LDCs. E-Commerce in LDCs is anyway still in its infancy, with little understanding of the types and models of E-Commerce that are relevant for LDC organisations or even the relevance of E-Commerce at all in LDCs. This chapter highlighted environmental and organisational factors, depicted in Table 3, as key areas that influence E-Commerce adoption in developing countries. Socio cultural factors have been included as an environmental factor that impacts E-Commerce. This is incontrast to the study by Molla & Licker (2005) who state that factors that affect E-Commerce from the environmental imperative are Government eReadiness, Market forces eReadiness and supporting industries eReadiness. This study strongly grounds itself in the local context in which the study is being conducted and context includes understanding the socio-cultural setting. The purpose of including socio-cultural issues is because although the suitable E-Commerce models may be devised, E-Commerce benefts may not be realized due to differences in the local context (Albi & Lieberman 2013); the fact that 'technology and society do not develop along separate trajectories, but are involved in a constant process of co-production or mutual shaping.... and the general tendency to regard technology as essentially linked to 'progress', without acknowledging the political nature of progress and how implicit social goals that underpin technology development are associated with particular interests and actors' (Russel et al 2010, 110). Thus the government, customer, supplier and private institutional contexts are not enough to explain the adoption of E-

Commerce; but needs to be suplimented with the understanding of social norms, behaviours and beliefs.

Organisational Factors	
Awareness	Perception of E-Commerce technologies
Management Commitment	Support for E-Commerce from organisational owners. This refers to having a clear-cut E-Commerce vision and strategy championed by the SME owner
Human Resources	Availability (accessibility) of employees with adequate experience and exposure to ICT and other skills needed to adequately staff E-Commerce initiatives and projects.
Technology Resources	ICT base of an organisation and the extent of its computerisation, the flexibility of existing systems and experience with network-based applications
Business Resources	Wide range of capabilities and most of the intangible assets of the organisation. It includes the openness of organisational communication; risk taking behaviour, existing business relationships, and funding to finance E-Commerce projects.
Governance	The strategic, tactical and operational model organisations in developing countries put in place to govern their business activities and E-Commerce initiatives
Environmental Factors	
Market forces	The assessment that business partners such as customers and suppliers allow for electronic conduct of business
Government	Assessment of the preparation of the nation state and its various institutions to promote, support, facilitate and regulate E-Commerce and its various requirements;
Supporting Industries	Refers to the assessment of the presence, development, service level and cost structure of support-giving institutions whose activities might affect the E-Commerce initiatives of businesses in desveloping countries
Socio cultural	Assessment of the presence of both formal and informal practices that affect E-Commerce development
E-Commerce adoption	
Initial adoption	Indicates whether or not an organisation is connected to the Internet with email but no website or has a static web-site that publishes basic company information on the web without any interactivity
Institutionalization	Indicates whether or not an organisation has attained an interactive, or transactive or integrated E- Commerce status.

Table 3: Factors affecting E-Commerce adoption (Molla & Licker 2005; Albi & Leiberman, 2013)

CHAPTER 3: THEORETICAL BASIS

3.1 Introduction

The preceding chapters presented the literature of E-Commerce to prepare the background for an understanding of the phenomenon under investigation. The purpose of this chapter is to present a theoretical lens which will provide an overall guide to an investigation of environmental and organisational practices by which E-Commerce becomes socially constructed in SMEs in LDCs. Practices which SMEs use to construct their understanding of E-Commerce are usually tied to a specific context, producing cultural models which are the means by which existing social relations are reproduced or contested, and different interests are served (Janks, 1997). This study adopts structuration theory as a guiding lens to investigate the E-Commerce phenomenon in Tanzanian SMEs. The theory was chosen, firstly, because it encompasses the whole arena of ongoing human action and interaction, thereby making it possible to explore the social construction of meaning (Karsten, 1995) attached to E-Commerce in Tanzanian SMEs and ,secondly, because it provides 'a link between individual choices and structural, contextual social forces' (Steinerowski & Steinerowska-Streb, 2012, 171).

The rest of this chapter is arranged as follows: Section 3.2 discusses structuration theory in general as a theory from the social sciences. Section 3.3 focuses on the use of structuration theory in Information System studies. Section 3.4 summarises the use of structuration theory in this study. Finally, section 3.5 concludes the chapter.

3.2 Structuration theory

Structuration theory was first developed by Giddens (1984) as a sensitising device for the purposes of thinking about, as well as interpreting, research problems and their results (Moore, 2011). It is a theory used to study social phenomena with the purpose of understanding how institutions or behavioral practices are produced and re-produced over time (Giddens, 1984). These practices, when routinised over time, eventually tend to determine how social realities come about and how a social system works (Brooks, 1997).

To produce or reproduce these behavioural practices, individuals draw on an array of interconnected rules and resources that may stretch across potentially great spans of time and space (Ogden & Rose, 2005). These rules and resources mediate human action while, at the same time, are reaffirmed by individuals whose actions simultaneously condition, and are conditioned by, them. Giddens (1982) argues that social phenomena are the result of the interaction between human actions and social structures, and the two should be seen as a mutually interacting duality rather than as independent and conflicting elements (Devadoss et al., 2002).

Giddens (1976) defines the concept of structure as generative rules and resources that individual members draw upon in their interactions. As rules and resources, structures are recursively implicated in the reproduction of social systems and they exist only as a memory trace and instantiated action of the social agents. He indicates that structures are not social facts, but rather the medium and outcome of human action or reproduction of practices. They do not exist in a concrete sense, but are instantiations of the agent's social interactions and actions over time intervals; and they provide the context for future action as instances of co-presence arising among the agents (Lyytinen & Ngwenyama, 1992; Dillard & Yuthas, 2002). Structures are 'rules and resources that human agents draw on, and simultaneously enact while accomplishing their daily routine through interaction within the social systems' (Sharma et al., 2012, 133). The structure of a social system, thus, is created by agency or human actions which constantly produce and reproduce the social structures which, in turn, constrain and enable human action and then the same reproduced structures determine future actions (Orlikowski & Robey, 1991).

A human agent is primarily understood as having the capacity both to sustain structures and to transform them, whether with conscious or unconscious intentions, while using resources that are culturally, socially, and historically developed and are available to them (Giddens, 1984; Emirbayer & Mische, 1998; Lasky, 2005). Agents are thus neither autonomous nor simply mechanical conveyers of animating environmental influences; but rather, they make causal contribution to their own motivation and action within a system of triadic reciprocal causation (Bandura, 1989). They have the capacity to make a

difference (Kort & Gharbi, 2011) and the capability to monitor their own actions and their consequences as well as the actions of others (Lyytinen & Ngwenyama, 1992). These characteristics allow them to set goals and plan courses of action likely to produce the desired outcomes (Bandura, 1989).

In relating agents to structure, Sydow and Windeler (1998) explain that structures never determine action: rather individuals are engaged in structures that they transform in the process of their actions. Agents thus constantly draw on existing structures (rules and resources), although these structure themselves are continually being produced and reproduced during agent interaction with or without conscious collusion of the agent (Hardcastle et al., 2005). When agents are able to use the resources and rules to their advantage, they possess the power to make a difference (Sarasona et al., 2006). To be an agent implies the ability to be aware of social rules and continuously, either consciously or unconsciously, reflect on one's activities and those of others – that is, possessing the ability to act purposefully, knowledgeably and reflexively (Giddens, 1984).

To conceptualise the theory, Giddens identifies three dimensions of external social structures as shown in Figure 8, namely, signification (rules of meaning, understandable communication, the ideas and values people hold); domination (the exercise of power via resources as channeled, for example, via the financial system and the interrelation of supply and demand); and legitimation (the sanctioning of each other).

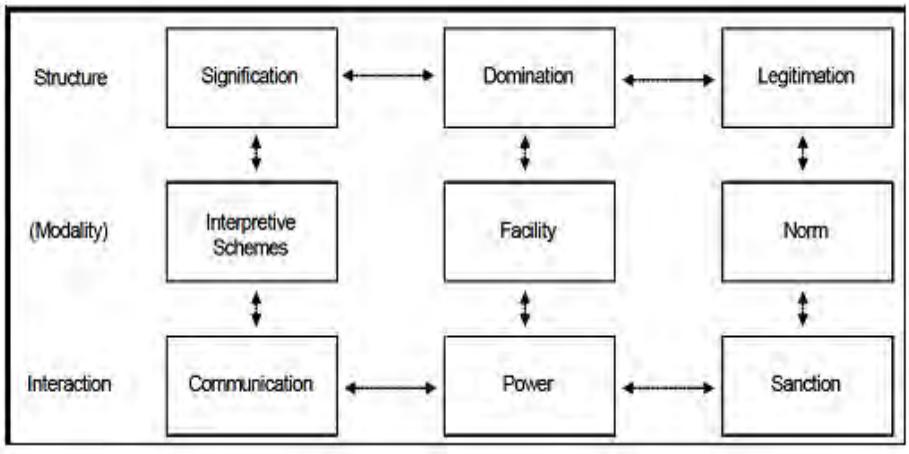


Figure 8: Dimensions of the duality of structure (Giddens, 1984, 29)

The dimensions correspond respectively to the internal structures of interpretive schemas (the 'frames' through which we view the world, cognitive knowledge concerning language/nonverbal codes), social norms (roles, values, ethical codes and sanctioning of individuals in encounters) and facilities (the capability to allocate resources or influence others).

3.2.1 Structures of signification

According to the structuration theory, structures of signification describe prevailing institutional structures that yield meaning and understanding (Ogden & Rose, 2005). They represent background assumptions, meanings, and sense-making practices that inform mutual understanding which become institutionalised in time (enduring) and space (Giddens, 1982). These structures ultimately create a blueprint, which Giddens calls an interpretive schema, that serves to guide the way an individual behaves and how social life should be. An interpretive schema provides 'regulative and interpretative rules constituted in social conduct and resources of authority, which can enable and constrain communication' (Hardcastle et al., 2005). Interpretive schemas consist of general language rules, symbolic representation and meaning necessary for communication (Sarason et al., 2006). Once an interpretive schema has been established and institutionalised, it becomes the common and agreed rules which actors use to rationalise their actions. Agents via an interpretive schema can now communicate with each other and make sense of the context they act in by drawing on structures of signification (Willmott, 1981; Lyytinen & Ngwenyama, 1992; Sydow & Windeler, 1998).

3.2.2 Structures of domination

Structures of domination are produced and reproduced by agents using available resources at their disposable. Resources are structured properties of social systems, drawn on and reproduced by knowledgeable agents during their series of interaction. They are of two kinds: authoritative resources, derived from the co-ordination of the activity of human agents; and allocative resources, derived from control of material products or aspects of the natural world (Giddens, 1984). These resources become the basis for

acquiring individual power during action and once legitimised, contribute to structures of domination (Willmott, 1981; Crowston et al., 2001).

Power involves the exploitation of the means of production such as information technology and e knowledge, other agents, political support and financial commitment and other economic resources, such as raw material present in the context (Sydow & Windeler, 1998; Rose 1998; Rai et al., 2009). Agents thus utilise power in interaction by drawing on the resources (facilities) they have access to contextually and individually, to transform interaction sequences (Lyytinen & Ngwenyama, 1992). The more knowledgeable agents are about their social context and the resources available to them, the more capacity they are assumed to have in exercising their power, and by exercising their power; agents give rise to structures of domination (Hardcastle et al., 2005).

3.2.3 Structures of legitimation

Structures of legitimation are established by agent conventions which are interpreted and verbalised by agents as to whether certain behaviours are right or wrong, legitimate or illegitimate, and are accompanied by sanctions and rewards (Hardcastle et al., 2005, Rai et al., 2009). This is achieved via norms which provide the concrete means agents use in a situated action context and characterise how agents make use of rules and resources therein (Sydow & Windeler, 1998). Norms are techniques or generalisable procedures applied in the enactment/reproduction of social structures (Jones & Karsten, 2008). They become reinforced or changed through social interaction and environmental constraints or opportunities by human agents (Orlikowski, 1992). They define appropriate rules which are articulated and sustained through rituals, socialisation practices, and tradition; and if not adhered to, may invoke sanctions – the outcome of following – or not following norms (the rules of legitimation) (Willmott, 1981; Jones & Karsten, 2008). The rules provide moral guidance and codes of social conduct for what people do: they define boundaries of expected practice so as to avoid sanction; and social order in terms of how to go about from day-to-day (Giddens, 1984; Hardcastle et al., 2005). These rules evolve over time and are created, reinforced, changed, and dismantled by human action to create and

reproduce structures of legitimation (Lyytinen & Ngwenyama, 1992; Crowston et al., 2001; Chu & Smithson, 2003; Hardcastle et al., 2005).

3.2.4 Intended and unintended consequences

The structuration theory discusses the ways in which a social system, via the instantiation of rules and resources and in the context of unintended consequences, is produced and reproduced in interaction (Giddens, 1979; 1984). A social system, such as an organisation, works in a context-dependent, unpredictable, non-linear process. This work is carried out in an intentional manner for certain reasons within conditions of knowledgeability (intended consequences) and unintended and unpredictable outcomes. The latter are outcomes that would not have taken place if a social actor had acted differently but that are not what the actor had intended to happen (Giddens, 1979:1984;, Balogun & Johnson, 2005). These consequences of social practices impact those actions, causing a feedback loop that conditions social reproduction and implicates transformations and, in so doing, fundamentally determines the process of structuration through which systems are maintained and changed over time (Boudon, 1982; Giddens, 1982; Knorr-Cetina, 1981).

3.3 Structuration theory in Information Systems

In the Information system (IS) discipline structuration theory is recognised as having 'a substantial part to play in the development of the discipline and in helping to understand and interact with the societal, organizational and personal contexts without which the technology is meaningless' (Rose, 1998, 1). It provides IS researchers with a theoretical approach that helps them understand the interaction of user and information technology, the implications of these interactions, and the way to control their consequences (Pozzebon & Pinsonneault, 2005). It allows information systems to be conceptualized as social systems in which technology is only one of the elements (Walsham et al., 1988).

Barley (1986) was one of the earliest researchers to attempt to link structuration theory and Information Systems. He investigated the link between institution and action to outline a theory of how technology might be treated as a social rather than a physical object and structure, conceptualised as a process rather than an entity. This was followed up by many other studies. Jones and Karsten (2008) present a critical review of the work of structuration theory and its application in the IS field. They note that the IS field has used structuration theory in three broad strands of (i) application of structuration concepts; (ii) development and application of an IS-specific version of structuration theory; and (iii) critical engagement with structuration theory.

3.3.1 Application of structuration concepts

Research which applies structuration concepts tends to take structuration theory as a given and explores how it, and its associated concepts, can offer insights on IS phenomena. They either seek to apply structuration in general in an IS context – being quite explicit about the use of the theory – or seek to apply structuration as a background to analysis while focusing on particular concepts such as structural properties (significance, domination, and legitimation), and the temporal/spatial ordering of social practices. In so doing, such studies have provided the IS discipline with means of supporting analyses of IS phenomena; and new concepts, or distinctive perspectives on existing ones, that enrich the understanding of IS phenomena (Jones & Karsten, 2008). Typical examples include Walsham and Waema's (1994) study on IT strategy implementation, Boland and Greenberg's (1992) study of information systems development, and Karsten's (1995) examination of the organisational implementation of a groupware system. Rose and Lewis (2001) use structuration theory to explain the role of IT artifacts in the production and the socialisation of organisational knowledge. Rossi and Zamarian (2006) used structuration theory to explain information system development. Others, such as Walsham and Han (1991, 1993), have linked social action and social structure with respect to computer-based IS, in terms of aspects of meaning, power relations, and values. Jones and Nandhakumar (1993) used structuration theory as a basis for differentiating the constraints on information systems development, specifically in conceptualising the dynamic relationship between developers and executive

users and an understanding of how this relationship shaped, and was shaped by, various constraints. Sydow and Windeler (2001) investigated the interorganisation network from the structuration perspective. Gao and Lyytinen (2000) defined the telecommunications market as a structure, and used structuration concepts to analyse its transformation as a process promoted by governments, customers, telecommunications operators and equipment suppliers.

3.3.2 Development and application of an IS-specific version of structuration theory

Research in the second strand relates to studies that have sought to address Giddens's lack of attention to IS by developing and applying IS-specific versions of structurations, discussed below.

3.3.2.1 Adaptive structuration theory (AST)

Studies that use AST do so to make sense of the interaction between technology artifacts and human action in terms of relationships between dependent and independent variables (Pozzebon & Pinsonneault, 2001). AST examines the structures technologies provide, recognising the manner in which they emerge through human interaction (appropriations) (Davern &Wilkin, 2009). It 'examines technological and organizational change from the types of structure offered by advanced technologies, and the structures that emerge in human action as people interact with these technologies' (Von Krogh & Haefliger, 2010, 235). AST is based on the concepts of structuration and appropriation. It aims to provide researchers with insightful probing and characterisation of the deep structures that exist in both the technological artifacts and the work environments within which these artifacts are applied. Appropriation is the process by which participants invoke or enact available structures and thereby give meaning to them and continuously produce and reproduce structures as the group's interaction process occurs (DeSanctis & Poole 1994). It is the 'process of calling upon a technology in social interaction' (Miller, 2008, 59). DeSanctis & Poole (1994), when analysing technology appropriation, suggest three constructs that indicate level of appropriation namely (i) faithfulness (in respect to the structure's design principles); (ii) the group's attitudes towards the structures; and (iii)

level of consensus. A faithful appropriation occurs when participants' interaction with the structures is consistent with the spirit – the general intent of the technology as it is presented to the user and as reflected in the design and implementation strategy. Attitudes describe the level of comfort that group members feel with the use of the technology, and the degree of respect they have for it. Level of consensus entails the agreement on how structures should be used. DeSanctis & Poole (1994) advocate the theory as it expounds the nature of social structures within advanced information technologies and the key interaction processes that figure in their use. In so doing, researchers can reveal the complexity of technology-organisation relationships and thereby obtain a better understanding of how to implement technologies and, ultimately, be able to develop improved designs or educational programmes that promote productive adaptations.

AST is criticised as being organised around an 'agenda heavily oriented to deterministic, functional research' (Jones & Karsten 2008, 146). AST's postulation that structure is inscribed into technology is perceived to deviate from Giddens' concept of structure (Rose & Jones 2005; Rose & Scheepers 2001). AST therefore does not give a structurational account of IS which adheres to Giddens' intentions (Rose et al., 2005). Davern and Wilkin (2009) also report that most use of AST has been in the positivism paradigm. Pool (2009, 583), however, disagrees, indicating that 'AST was not meant to directly translate Giddens's (1979, 1984) theory into an information systems context; and that the use of AST' does not have to be the positivist only because its concepts can be studied via quantitative as well as interpretive methods, and can be illuminated by multiple methods. While AST was drawn out of Giddens's structuration theory, it has also been criticised as not holding true to his principles (Davern & Wilkin, 2009).

3.3.2.2 Action-structure interplay

Orlikowski (1992) formulated a structuration model of technology to allow for a deeper and more dialectical understanding of the interaction between technology and organisations. She investigated the relationship between institutional properties, human agents and technology and provided a deeper and more dialectical understanding of the

interaction between technology and organisations. Orlikowski (2000) also established that technology is both constituted by human agency, and helps constitute institutional practice (Rose & Hackney, 2003). She contends that human actions are enabled and constrained by structures, which can be the IS implemented in organisations. Such IS, however, are a result of the previous choices and actions of its users. In this ongoing interaction, agents change the technology physically or interpretively – each time they use it. That is, 'they transform the embedded rules and resources, and hence the institutional context and strategic objectives of the technology's creators, sponsors, and implementors' (Orlikowski, 1992, 412). Thus the same technology can be appropriated in diverse ways and come to have different meanings and effects for different users (Pozzebon, 2000). This can lead to consequences that are either intended or unintended. On this note, Orlikowski (2000) then proposes a structuration model, depicted in Figure 9, for investigating the technology phenomena.

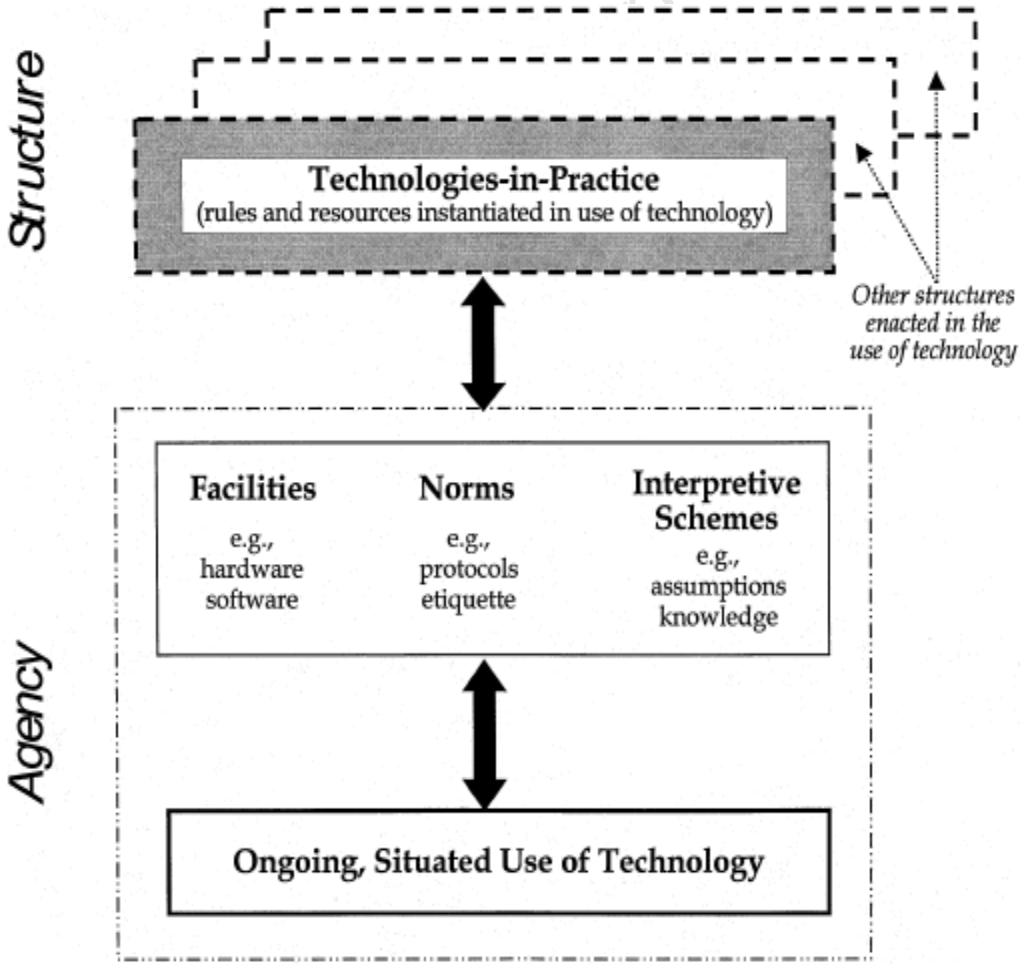


Figure 9: Enactment of technologies-in-practice (Orlikowski, 2000, 269)

Orlikowski (2000, 262) terms the enacted structures of technology use, emerging through recurrent interaction with technology, as

> technologies-in-practice – the sets of rules and resources that are (re)constituted in people's recurrent engagement with the technologies at hand…specific structure routinely enacted as we use the specific machine, technique, appliance, device, or gadget in recurrent ways in our everyday situated activities... the particular structures of technology use that users enact when engaging recurrently with a technology.

However, technologies-in-practice are not constant. They may change and different ones can be enacted with time, depending on how knowledgeable the users are about using their technology and on the contextual circumstances of use. When the agent becomes more aware of and knowledgeable about the resources available and the social context, the technologies-in-practice (structures) can be, and are, changed. As this occurs, the facilities, norms, and interpretive schema used are also changed; and this change could cause intended or unintended consequences oblivious or conscious to the agent. However, in the absence of this awareness and understanding, agents will continue to reenact the same technology-in-practice, thus further reinforcing it over time so that it becomes taken for granted. Because agents have the ability to act otherwise, 'they can and do circumvent inscribed ways of using the technologies – either ignoring certain properties of the technology, working around them, or inventing new ones that may go beyond or even contradict designers' expectations and inscriptions' (Orlikowski, 2000, 261). An agents' interaction with the technology, thus, is always actively being shaped and reshaped by the properties comprising the technological artifact, the 'skills, power, knowledge, assumptions, and expectations about the technology and its use, influenced typically by training, communication, and previous experiences' (Orlikowski, 2000, 267). This model by Orlikowski (2000) provides an appropriate foundation for this current investigation of how social systems and practices affect E-Commerce application usage by SMEs, and how these applications become socially acceptable.

3.3.3 Critical engagement with structuration theory

Researchers in this realm tend to explore its limitations, especially in comparison to alternative theoretical approaches that are seen to address its perceived deficiencies. Such studies actively engage with the theory – exploring and challenging its limits (Jones & Karsten, 2008). Johnston (2001) reports that, despite its advantages, critics of structuration theory see it essentially as a theory about social aspects of human action and was created to offer a solution to a particular problem in sociology, and thus the incorporation of material systems is not entirely natural. Structuration theory fails to explain the relationship between technology and the individual, something offered by alternative theories, such as Actor Network Theory. Giddens's view on agency and structure is seen as problematic when studying artifacts like ICT-based IS because that would mean that structure cannot be separated from agency (Carlsson, 2003). This has become one of the theory's popular criticisms (Kort & Gharbi, 2011) as it 'conflates agency and structure' (Reed, 1997, 25) and, in doing so, obscures the processes that occur when social interaction leads to cultural, structural and individual elaboration (Priestley 2011). Because of these shortcomings, researchers have tended to enrich this theory with other theories, specifically Actor Network Theory (Brooks & Atkinson, 2004, Brooks et al., 2008).

Critical realists have also criticised structuration theory (Bhaskar, 1979; Archer, 1982). They argue that social reality is not simply composed of agents' meanings, but that there exists structural factors influencing agents' lived experiences and therefore critical realism starts from an ontology that identifies structures and mechanisms, through which events and discourses are generated, as being fundamental to the constitution of our natural and social reality (Harré, 2009). Its major difference with structuration theory is that it goes beyond the understanding of social practices. It holds that 'we will only be able to understand –and so change – the social world if we identify the structures at work that generate those events or discourses' (Bhaskar, 1989 as referenced by Carlsson and Tona, 2012, 43). Another difference between critical realists and Giddens's structuration theory is in the conceptualisation of social structures (Priestley, 2011). Giddens's (1984) structuration theory views social structures as rules and resources that govern human behavior. Critical realism differs from this somewhat deterministic view (Priestley, 2011),

tending to see it as the emergent properties of 'systems of human relationships among social positions' (Porpora, 1998, 339), or the constituent parts, the relations between them, the emergent whole and the emergent properties of the whole (Elder-Vass, 2008). Bakewell (2010) adds that from a critical realist perspective structuration theory has failed to offer any significant advances for migration theory due to the dualism inherent in structuration. This is because structuration as a 'theory offers very little in the way of guidance to show how the balance between structure and agency is achieved in any particular context' (Bakewell, 2010, 2). Iannacci & Hatzaras (2012) suggest that scholars such as Becker (2005) and Feldman and Pentland (2003) have made a remarkable contribution as regards the distinction between action and representation within the discipline of organisational studies. Their work criticises structuration theory as not being able to acknowledge that agents and structures are different entities and, therefore a full analytical separation between action and structure is necessary (Iannacci & Hatzaras, 2012).

3.4 Structuration theory in this study

This researcher rejects the structuration approach as presented by the proponents of AST on the basis that it assumes a deterministic position that supports regularities and predictions inherent to positivist assumptions (Pozzebon & Pinsonneault, 2001), and its view of the pre-existence of structures within a technology (locating structure inside the technology) (Jones, 1997). This study uses structuration theory as theorised by Orlikowski (2000) and many other researchers who used structuration works centred on the action-structure integration or interplay (De Vaujany, 2008). It is imperative to note that, despite these criticisms, structuration theory has the power to capture human social practices and their relation to social structures. The choice of this theory is firstly grounded in the theory's ability to (i) illuminate 'how sociological-biographical realms interact in the study of ICT-related practices' (De Vaujany, 2008, 2) and (2) 'provide an appropriate foundation for the investigation of how institutional or organizational factors influence individual initiatives and, thereby, the assimilation of Web technologies' (Chatterjee et al, 2002,68). Secondly, justification for structuration theory in this study is that is has been advocated for in the study of interorganizational systems (IOS) such as electronic data interchange (EDI), electronic funds transfer, electronic forms, electronic

messaging, and shared databases which provide the foundation for electronic business (Gregor and Johnston, 2000, 1). It is argued that 'Structuration theory, or structuration - type theory, is attractive as a means of advancing our understanding of the development of interorganizational systems' because it 'allows for the incorporation of the different views that must be considered in development of IOS and also provides a means for handling the complexity of the interactions between the activities of enterprises, the industry structure and the external environment. It also allows for the reflexivity of these interactions' (Gregor and Johnston, 2000, 5). Thirdly, the use of structuration theory has been adopted in this study because E-Commerce is a new technology in Tanzania and its introduction into the Tanzanian context 'is an occasion for structuring' (Barley 1986) – that is, it provides opportunities for changes in the social order (Greenhalgh and Stones 2010); and the theory offers the possibility of understanding the innovation process in its specific context (Jones et al 2000). Finally, there have been few studies that have focused on the 'the multi-level dimensions and often paradoxical links between agency and structure in studies of innovation in SMEs (Edwards et al 2005).

From the structuration theory perspective, and following Orlikowski (2000), this study conceptualises E-Commerce applications as rule-resource sets that constrain, and are reproduced by, SME social interactions. The rules-resource sets describe the prevailing structures which SMEs draw on to reach a course of action. As SMEs use E-Commerce applications in recurrent social practices, their actions become structured based on the rules-resource sets. E-Commerce applications, thus, form a set of rules and resources which SMEs can instantiate and change during their ongoing interactions and actions over time intervals. As resource, E-Commerce applications provide SME agents with an array of material objects and means to harness the activities of other human beings, thereby rendering the capability to exercise power in interactions with other SMEs. As regards the rules, E-Commerce applications are both engraved with (i) built-in in protocols and procedures that state how they can be used and (ii) rules which the SME context defines, an example being on how the applications should be used in the organisation and by whom.

In so doing the rules facilitate the formulation of interpretative schemas that act as a cognitive guide to understand how SMEs should behave/act with respect to E-Commerce

applications and provide reassurance about the organisational legitimacy of their actions. Rules also lead to the formulation of a particular set of rights and obligations which, if not adhered to, may invoke sanctions (Dillard & Yuthas, 2002, Chatterjee et al., 2002). The more knowledgeable the SME is about available social contextual rules and resources, the more capacity it is assumed to have in exercising its power. This ability to possess power gives the SME the edge to enforce change in its social system.

The constant realisation of these rules and resources means that an SME agent is always actively conscious of his/her actions and this capability allows them to set goals for themselves, and plan courses of action likely to produce desired outcomes (Bandura, 1989). Through their actions and thoughts, SMEs are active sense-makers, engaged participants, and creators of life in their settings and their identities emerge from their actions and interactions (Alvarez, 2002). Because of these inherent traits, SMEs can thus decide to act differently or unexpectedly when using E-Commerce applications such as 'ignoring certain properties of E-Commerce, working around them, or inventing new ones that may go beyond or even contradict designers' expectations and inscriptions' (Orlikowski, 2000, 261). In so doing SMEs, whether knowingly or not, shape E-Commerce structures and thus their use, resulting in intended or unintended consequences. This is not to say that SMEs enact these structures alone. Other potential social structures are continually being enacted when SMEs engage recurrently with E-Commerce applications because the enactment of any technology is 'situated within a number of nested and overlapping social systems' (Orlikowski, 2000, 270). As such, the power of an SME is not just reducible to its characteristics as an individual (SME owner) or as an organisation but derived from the interdependency relation with other structures such as banking institutions, market forces (customers and suppliers), government institutions, and education institutions, to mention a few.

Although structuration theory has featured quite significantly in the study of Information Technology (Jones & Karsten, 2008), most studies are limited to the 'internal structural properties of the organization, and neglect Giddens's concern for the engagement of organizations within plural and overlapping social system' (Montealegre, 1997, 106). According to Steinerowski and Steinerowska-Streb (2012, 171), an

understanding of structuration theory is 'that there is a link between individual choices and structural, contextual social forces'. This means that contextual social forces are as important as the internal structural properties of the organisation. When researchers limit their attention to organisational and IT structural properties alone, 'they fail to acknowledge the degree to which IT plays a role in social setting transformation' (Montealegre, 1997,106). It is recommended, therefore, that structuration theorists should not only analyse organisational and IT structural properties but should also 'analyse how structural rules and resources within the environmental, organizational, and IT contexts influence and are influenced by the process of IT implementation' (Montealegre, 1997, 106). Based on this background, the next subsection particularises structuration theory within the context of E-Commerce literature. That is, using structuration and E-Commerce literature, this section links E-Commerce dimensions of organisational and environmental factors to the dimensions of structuration.

3.4.1 Structures of signification

In an organisational context, structures of signification (meaning) are communicated via interpretive schema or stocks of knowledge to provide meaning and promote understanding, and serve as cognitive guides for individual action and behaviour (Rai et al., 2009; Chu & Smithson, 2003). These structures are driven by an organisation's commitment towards its strategies, vision and goals as articulated by top management or the owner (Huff & Kelley, 2005, Kao & Decou, 2003). With E-Commerce, organisation commitment manifests as the provision of financial and political support necessary for E-Commerce (Rai et al., 2009). Through management commitment and its strategy, the organisation crafts patterns of activities which have an impact on the achievement of its goals in relation to its environment (Hakansson & Snehota, 2006). The patterns of activities consist of shared knowledge and organising rules that guide social interaction and behaviour as to the way business operations are conducted (Yuthas et al., 2004). Management commitment conveys a powerful signal to the rest of the organisation as to the importance placed on E-Commerce, and also provides an environment that could facilitate and promote E-Commerce adoption and institutionalisation behaviours (Chatterjee et al., 2002). Top management's perceptions of the degree to which E-

Commerce will enhance the organisations performance, decrease transactional delays, and result in improved efficiencies and communication with business partners translates into beliefs and meanings that actors consequently attach to E-Commerce, which could translate to a willingness to adopt the innovation (Teo et al., 2004; Grandon & Pearson, 2004). An SME's perception and comprehension of E-Commerce and its potential benefits and risks have an impact on structures of signification. Conversely, the same enacted structures (resulting from the beliefs about the technology, previous experience, etc.) impact how an SME addresses and takes decision on E-Commerce – they constrain and enable the organisation's ability to provide the necessary commitment (such as human, political and financial resources) towards E-Commerce adoption and institutionalisation. An organisation's awareness, interpretations and belief about E-Commerce can enable or constrain existing structures of signification concerning it. In addition, an organisation's management is always striving for a 'fit' between its capabilities and the environmental characteristics (Hakansson & Snehota, 2006). How an organisation perceives the environment is significantly important to the study of structures because these perceptions translate into beliefs and consequently the meaning attached to, for example, an organisation's business partners (customers and suppliers), political leadership, and the extent to which the business environment is conducive for technology adoption (availability of support-giving institutions such as telecommunications, financial, trust enablers and the IT industry) (Wang & Benbasat, 2008; Molla & Licker, 2005). The SME's assessment and evaluation of the relevant external factors, thus, has a significant impact on how structures of signification are formed. At the same time, the structures affect how the SME addresses E-Commerce adoption and institutionalisation amidst external factors.

3.4.2 Structures of domination

Organisations are said to possess power and have been linked to structures of domination 'where power and domination refer to a collective capacity to act' (Leflaive, 1996, 23). An organisation possesses power obtained through its members who have the ability to act using available facilities (resources) in order to facilitate the realisation of specific social goals or objectives. This realisation, according to Yuthas et al. (2004), results in the

manifestation of power by agents controlling the resources (both allocative and authoritative). Whilst allocative resources have been linked to finances (Rai et al., 2009; Kao & Decou, 2003) and availability of technology (Kao & Decou, 2003; Rose & Scheepers, 2001), authoritative resources have been linked mainly to ICT-related technology awareness, commitment from management, and the extent to which IT innovativeness, in general, is desirable and pursued in the organisation (Barzilai-Nahon & Scholl, 2004). Against this background, the commitment of an organisation towards E-Commerce adoption and institutionalisation is affected by the available resources and capabilities for humans to accomplish outcomes. The exploitation of resources present in context contributes to structures of domination (Rose, 1998). In addition, the prevailing structures of domination affect the SME as they define institutional rules that regulate actions and behaviours of individuals (Rai et al., 2009; Chu & Smithson, 2003).

Environmental variables also play a pivotal role in producing structures of domination because 'human activity is dependent on the existence of the environment' (Woodgate & Redclift, 1998, 5). Organisations that have access and control over scarce resources tend to be more dominant in the business industry than those that do not, even though forms of domination might differ (Hambrick, 1981). Apart from accessibility to resources, organisations need to perceive structural assurance both in the technology usage and the environment at sh global and a national level in order to utilise the opportunity to invest in it (Wang & Benbasat, 2008). Existing institutional structures have a significant impact on actors' beliefs and intentions and can lead to either adoption or non-adoption of E-Commerce (Pavlou, 2002). Huang et al. (2006) and McKnight et al. (2004) affirm that structural assurance influences actors' trust beliefs and trust intention and, consequently, affects their behavioural intention to use an innovation. They perceive power when they can foresee conducive structural conditions from their environment such as policies that encourage E-Commerce adoption. This is not to say that they will always be inclined to adopt E-Commerce. On the contrary, organisations may decide not to adopt (even though there exist structural assurances) because of their values and internal political processes or because of their assessments of their relative strengths and weaknesses (Hambrick, 1981).

3.4.3 Structures of legitimation

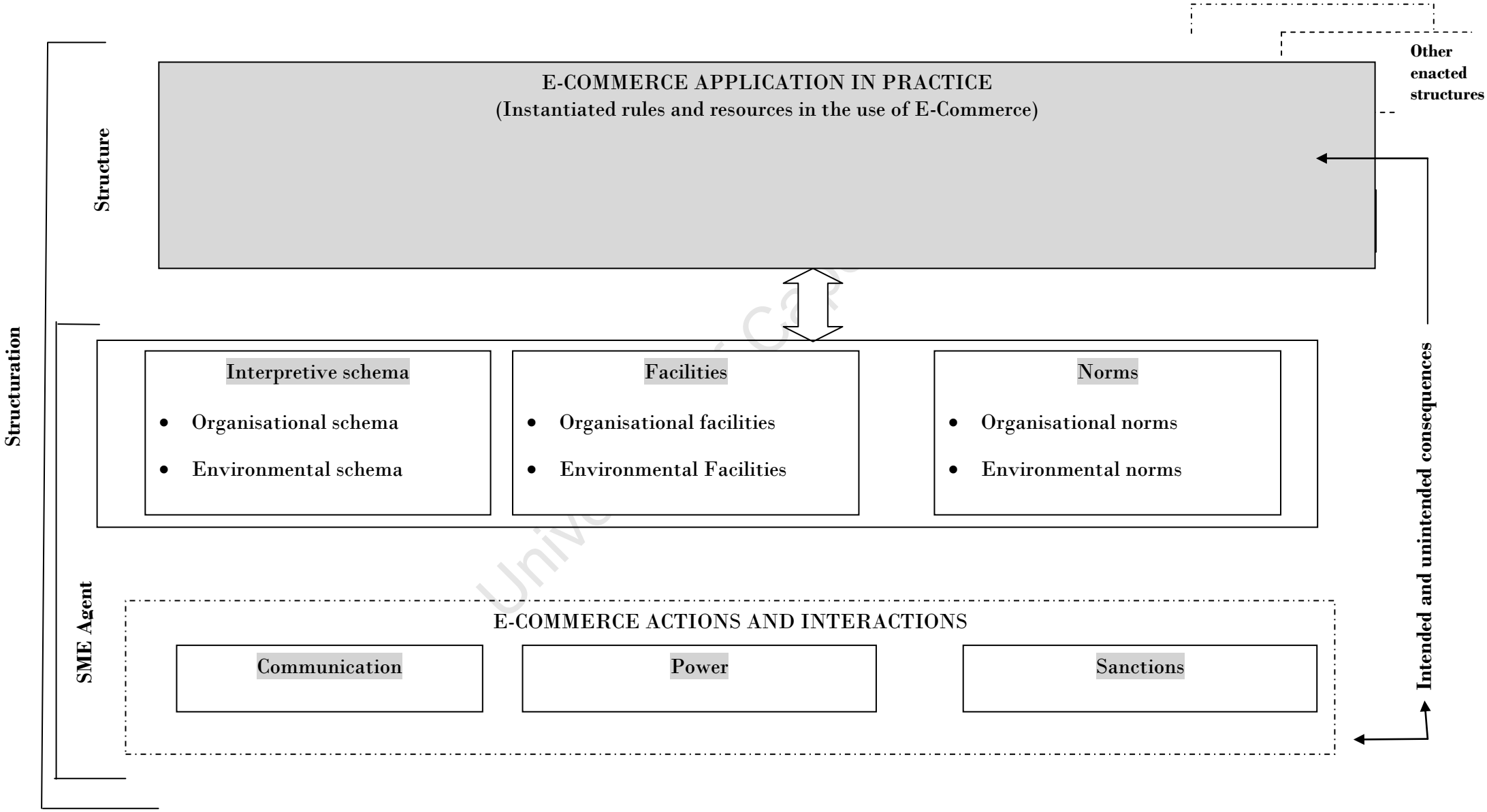
Structures of legitimation in an organisation result from people's social practices (norms), which become routinised, established and legitimised by SME actors (specifically, the SME owner), who have the ability to legitimise actions, namely, the willingness of managers to expend their time and energy in making sense of technology, exploring ways in which the technology's functionality could be leveraged into the business processes and activities, and justifying the viability of specific technology oriented projects (Chatterjee et al., 2002). Using structuration theory, Rai et al. (2009) isolated organisational, technological, and interorganisational factors that shape the meta-structures for the aggregated assimilation of Electronic Procurement Innovations (EPI). They found that top management imperatives for EPI and behavioural regulations associated with EPI Standards Efficacy usage act, as rules which can constrain EPI assimilation behaviours in an organisation. Other management rules are those that define communication patterns routinely followed in electronic mail which include (a) 'define access to mail, (b) regulate how to maintain mailing lists, and (c) define acceptable protocols of communication behavior, etc.' (Lyytinen & Ngwenyama, 1992,27). Top management has key responsibility for ensuring that strategic, tactical and operational rules to govern their business activities and E-Commerce initiatives are in place. These rules, arising from organisational factors, have an impact on structures of legitimisation. Legitimation structures, however, also recursively impact on the rules as agents continually reflect on and reinterpret them.

Structures of legitimation are also experienced by an organisation from its environment. The norms from the external environment include, but are not limited to, copyright protection laws, legal regulations of e-contracting/transaction laws, e-signature laws, privacy and security protocols designed to promote legal certainty, trust and technology reliability (Rai et al., 2009). In addition, there is pressure for organisations to conform to industry standards or to a competitor's level of technology (Bayo-Morione & Lera-Lopez, 2007; Teo et al., 2004; Castleman & Chin, 2002). These external factors, therefore, create and are recreated by structures of legitimation.

3.5 Conclusion

This study uses structuration theory as a lens to study the E-Commerce phenomena in Tanzania. To operationalise it, structuration theory concepts have been particularised in the summary of E-Commerce literature to yield a theoretical framework presented in Figure 10, from which E-Commerce phenomena can be investigated with the purpose of understanding how E-Commerce is affected by environmental and organisational conditions and the resources of Tanzanian SMEs. The framework defines E-Commerce applications as rule-resource sets that constrain, and are reproduced by, SME social interactions within the SME context via the modalities of interpretive schemes, facilities and norms. The rule-resource set being invoked in E-Commerce applications is partly embedded in the applications and partly within the larger SME context that is volatile, with external pressures and internal organisational concerns. By focusing on contextuality, the framework allows the investigation of ongoing situated use of E-Commerce thereby emphasising the way activity grows directly out of the particularities of a given situation. The framework recognises SME's structural properties (rule-resource sets) and constraining context which enables, sustains, and redirects the uses of E-Commerce applications. This is a central point to the study of E-Commerce in LDCs where there has been limited research conducted to investigate contextual phenomena and, perhaps more importantly, the notion that 'the outcomes of using the technology are largely dependent on the structural properties of the social system' (Lyytinen & Ngwenyama, 1992, 31). The invoked rule-resource sets arising from ongoing SMEs' use of E-Commerce are continually evolving, being reinterpreted and renegotiated (Lyytinen & Ngwenyama, 1992). They are not stagnant but may be changed from deliberate alteration of components of the technology or changed through improvisation (Orlikowski, 2000, 270). When changed, enacted structures which we hereby term 'E-Commerce applications in practice' are affected, and different practice enacted or reproduced with time depending on how knowledgeable the SME is about E-Commerce.

Figure 10: Conceptual Framework



During interaction SMEs communicate with each other through the application of their ongoing situated knowledge about their organisation, attitudes, perceptions and internal and external support of E-Commerce. In so doing, they create a shared understanding of E-Commerce – an interpretive schema, and they produce and reproduce structures of signification via these interpretive schemes by constraining the meaning they attribute to E-Commerce. However, until such time the SME's owner's knowledge of the organisation, attitudes and perceptions of E-Commerce are actually used or implicated in their communicative actions – 'and thus become part of a process of structuring–they are, at best, potential structuring elements, and at worst, unexplored and forgotten' (Orlikowski, 2000, 260). Once the knowledge is put into use, SMEs gain the capacity to make sense of their and other's communicative actions. This suggests that ongoing situated knowledge of the organisational and external attitudes, and perceptions of E-Commerce are used by SMEs in interactions to make sense of their and other's communicative actions. In so doing, SME create an interpretive schema that mediates the production and reproduction of structures of signification and, consequently, create and recreate E-Commerce meaning.

SMEs' use of rules and resources in their interaction not only give rise to structure of signification, but also to structures of domination and legitimation. SMEs could have the ability to possess resources and use these resources provide them with the capacity to effect change (such as behavioural intention to adopt E-Commerce) thereby giving rise to structures of domination. It is through these facilities that power is exercised. The ability to exploit facilities gives SMEs a transformative capacity, the power of human action to transform the social and material world (Roberts & Scapens, 1985, 449). Its use in organisations is mediated via the organisational resources that participants bring to, and mobilise within, interaction (Giddens, 1979, 92-93). This suggests that SMEs' use E-Commerce applications in their interaction within the constraints of available organisational and external facilities and subsequently affect each other's conduct through the application of power or capabilities they exert in their organisational roles. In so doing they produce and reproduce structures of domination and consequently impact their transformative capacity to exploit E-Commerce.

Finally, interaction in organisations does not occur blindly but is guided by the application of normative sanctions, expressed through the cultural norms prevailing in an organisation, which ultimately constitute the organisational structures of legitimation when sustained through rituals, socialisation practices, and tradition (Orlikowski, 1992). SMEs create sanctions and permit the sanctioning of interaction through the application of values and conventions of their organisation, and on external rules, norms and standards such as competitive pressures, market force readiness, government's policies with respect to ICTs and E-Commerce, and supporting industries. That is, structures of legitimation are created by SMEs through the generalisable procedures applied in the enactment/reproduction of social practices towards E-Commerce. This suggests that SMEs draw on the values and conventions of their organisation, and on external rules, norms and standards to create E-Commerce sanction rules. In so doing, they produce and reproduce structures of legitimation that guide how E-Commerce is practiced. SMEs' actions, however, often produce intended and unintended consequences on the social system within which they are situated, specifically on the enacted structures of E-Commerce applications in practice. The consequences tend to affect existing enacted structures of signification, domination and legitimation, either by reaffirming them, or recreating new ones (Lyytinen & Ngwenyama, 1992). This suggests that SMEs' use of E-Commerce applications-in-practice in their daily business actions and interaction gives rise to intended and unintended consequences which reaffirm existing E-Commerce structures or create new ones.

CHAPTER 4: RESEARCH METHODOLOGY

4.1 Introduction

This chapter outlines the methodological approach undertaken during the study. The purpose of the study is to investigate environmental and organisational behavioural practices by which E-Commerce becomes socially constructed in SMEs in LDCs. Three research questions are investigated:

1. What are the socially constructed practices of Tanzanian SMEs with regard to E-Commerce? The researcher is aware that 'social activity is shaped by culturally shared frameworks of conceptual understanding' (Astley 1985, 506). E-Commerce activities therefore would form part of a social activity that SMEs perform using their shared framework of understanding of the phenomena. Therefore to arrive at the socially constructed practices of Tanzanian SMEs, we firstly *interrogate SMEs conceptual understanding of the E-Commerce phenomena*;

2. How does the ongoing situated use of E-Commerce in SME interact with environmental and organisational conditions and resources to produce and reproduce social structures of E-Commerce? The continuous usage of a technology by an organization is dependent on two factors: internal organizational factors and external factors. Against this background, we *seek to understand the relationship that exists between an SME and organizational as well as environmental circumstances that enable and constrain the usage of E-Commerce*;

3. What are the unintended consequences of enacted E-Commerce practices in Tanzanian SMEs? According to Orlikowski & Iacono (2000, 364) 'all action in the world, including the development and use of technology, has unintended consequences'. As SMEs enact E-Commerce, there may be unintended consequences because such enactment in a social system can have multiple implications (Orlikowski & Iacono, 2000, 364). We therefore *examine the unanticipated or unacknowledged consequences of E-Commerce usage within SMEs so as to be sensitive to the full repercussions of such practices* especially in the event of

transferring such practices from one cultural context to another (Whittington et al., 2003, 404).

The study uses two methodological approaches to arrive at its goal. Firstly, it uses a quantitative approach to investigate factors that affect E-Commerce adoption so as to have a preliminary understanding of E-Commerce status quo in Tanzanian SMEs. This preliminary understanding is necessary because of the limited number of studies conducted in LDCs and in Tanzania in particular in which the E-Commerce phenomena is examined from the SME perspective. Secondly, the study uses qualitative approaches to investigate environmental and organisational practices by which E-Commerce becomes socially constructed in SMEs in LDCs.

The rest of this chapter is arranged as follows: Section 4.2 presents the ontological stance and epistemological approach to show how the study intends to gain the knowledge it seeks. The research method then follows in Section 4.3 and Section 4.4 reports on the ethical considerations followed in the conduct of the study. Section 4.5 concludes the chapter.

4.2 Ontological and epistemological approach

These research questions will be explored using structuration theory – a theoretical lens presented in the preceding chapter. Structuration theory allows for the study of social construction of meaning as it has the power to explore ongoing human action and interaction (Karsten, 1995). It is a theory that advocates understanding and interpreting a social phenomenon. Against this background, the ontological stance adopted for this study is the belief that all scientific interpretation (the derivation of all scientific meanings) is subjective. This means that the reality is not given or out there but is socially constructed by intelligible SMEs agents who are active participants, whose talk is laden with preconceptions, assumptions and beliefs from their cultural settings, and they create and shape their own understanding of E-Commerce based on their social context. The study, therefore, endorses the subject matter of inquiry by acknowledging the world of consciousness and humanly created meanings (Ngwenyama & Lee, 1997) and, in so

doing, is concerned with the investigation of a phenomenon: understanding why people behave as they do within their specific cultural and contextual settings (Alvarez, 2002). In this realm of research, reality is not given but a coherent view of reality is arrived at by the researcher and the subjects despite the existence of multiple views (Deetz, 1996) arising from the enquirer's assumptions and preconceptions, as well as those of the human subjects of the enquiry (Walsham, 1995). Subjective researchers seemingly cannot separate themselves from the phenomena and people they study because personal values do influence the investigation (Toma, 2000) and such researchers end up sharing a 'common human history and 'lived experience' in a 'life-world' shaped by 'tradition' with those they study' (Butler & O'Reilly, 2010, 6). The data that is gathered by the researcher also cannot be 'value-free data, since the enquirer uses his or her preconceptions in order to guide the process of enquiry, and furthermore the researcher interacts with the human subjects of the enquiry, changing the perceptions of both parties' (Walsham, 1995, 376).

The researcher's ontological stance was justified by the fact that research in Information Systems in developing countries 'has been shaped with acute awareness of the relentless ICT and organizational innovation taking place in advanced economies of the world' (Avgerou, 2008, 135), thereby ignoring the importance of the socio-cultural facets of developing countries. By adopting this subjective ontological stance the researcher aims to bring in the contextual element in the study of Information Systems in countries and enhance the interpretation of the results which is crucial because while 'communities may have some broad similarities, each community has specific social interactions that constitute a unique interpretative context' (Jarzabkowski, 2004, 10).

Whilst ontology indicates understanding, epistemological assumptions are concerned with the nature of knowledge and the proper methods of how we come to the understanding of our world (Dixit & Stump, 2011; Tan et al., 2009; Beckwith et al., 2008). The objectivity and subjectivity paradigms have traditionally been the two ways of getting at the truth (Brown et al., 2008). Researchers with an objective approach and positivistic in nature seek 'to explain and predict what happens in the social world by searching for regularities, causal relationships between its constituent elements' (Iivari et al., 1998, 174). They assume that an objective physical and social world exists independently from humans,

that is, the researcher is independent from the phenomenon (Kort & Gharbi, 2011). From a methodological approach, researchers who follow objective approaches generally use quantitative methods with hypothesis testing (Kort & Gharbi, 2011).

Researchers who are subjective and interpretive in nature seek to give explicit recognition to the world of consciousness and humanly created meanings, as well as critiquing the forms of domination and distorted communication by showing how they are produced and reproduced (Ngwenyama & Lee 1997). According to Klein and Myers (1999, 69), IS research can be classified as interpretive if it is assumed that our knowledge of reality is gained only through social constructions such a language, consciousness, shared meanings, documents, tools, and other artifacts. Interpretive research 'attempts to understand phenomena through the meanings that people assign to them', and has emerged as an important strand in information systems research (Klein & Myers, 1999, 69) that emphasises the inherent meaningfulness of the social world (Mingers, 2004). By using interpretive research IS researchers can better understand human thought and action in social and organisational contexts (Klein & Myers, 1999).

This study is interpretive in nature but with multiple methods approach to better understand the manner in which E-Commerce sense-making takes place and how specific conceptions, environmental and organisational practices lead to various behaviours, for example, E-Commerce adoption or the lack thereof. The focus is on environmental and organisational practices because they are tied to specific historical contexts producing cultural models which are the means by which existing social relations are reproduced or contested and different interests are served (Janks, 1997). Combining multiple approaches to research is not new and has been advocated by Mingers (2001) who argued that a pluralist approach to IS research will yield richer and more reliable results. He indicates that a pluralist approach is necessary to deal effectively with the full richness of the real world because it is ontologically stratified and differentiated, and consists of a plurality of structures that generate the events that occur (or not). A pluralist approach is used in which each of the different paradigms focuses attention on different aspects of the situation and enriches understanding of the phenomena and demystifying the 'alternative conceptions of problems in the IS field' (Goles & Hirschheim, 2000, 249).

4.3 Research methods

This study follows a mixed method approach. A mixed method is a research procedure that 'involves collecting, analyzing, and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon (Leech and Onwuegbuzie 2009). 'Quantitative methods are a good fit for deductive approaches, in which a theory or hypothesis justifies the variables, the purpose statement, and the direction of the narrowly defined research questions' (Borrego et al 2009, 54). The researcher therefore projects his or her findings onto the larger population through an objective process and concludes based on data collected and measures of statistical analysis (Borrego et al 2009, 54). Qualitative studies however do not rely on statistical data but have emphasis on the context within which the study occurs (Borrego et al 2009, 54). Such studies are 'well suited for understanding phenomena within their context, uncovering links among concepts and behaviors, and generating and refining theory (Glaser and Strauss 1967; Miles and Huberman 1994)' (Bradely et al 2007, 2). Data collection methods for qualitative studies include individual stories, active listening skills, employment of observational skills, and discerning trends and patterns (Creswell and Zhang, 2009).

There are four designs that provide procedures for conducting mixed methods studies: concurrent design (or triangulation or parallel), explanatory sequential design, exploratory sequential design and embedded design (Cresswell and Zhang, 2009). A concurrent design requires the investigator to collect both quantitative and qualitative data simultaneously (i.e., at roughly the same period in a single phase) in the study. Both forms of data are then analyzed separately, and the results are merged in the results or in the interpretation (Creswell and Zhang, 2009). According to Hanson et al (2005, 229), the 'interpretation typically involves discussing the extent to which the data triangulate or converge' so as to confirm, cross-validate, and corroborate study findings. In sequential explanatory designs quantitative data are collected and analyzed, followed by qualitative data. The investigator first gathers and analyzes quantitative data, and then uses a qualitative follow-up data collection and analysis to help explain the quantitative results (Cresswell and Zhang, 2009). Such designs become useful for, 'explaining relationships and/or study findings, especially when they are unexpected' (Hanson et al, 2005, 229). A

sequential exploratory design collects qualitative data and analyzes it first followed by quantitative data. Thus 'Quantitative data are used primarily to augment qualitative data … useful for exploring relationships when study variables are not known, refining and testing an emerging theory, developing new psychological test/assessment instruments based on an initial qualitative analysis, and generalizing qualitative findings to a specific population' (Hanson et al, 2005, 229). Finally the embedded design involves embedding a supporting database collected using one form of data in a larger study that employs a different form of data (Creswell and Zhang, 2009) so as to gain 'a broader perspective on the topic at hand and for studying different groups, or levels, within a single study' (Hanson et al, 2005, 229)

This study uses explanatory sequential mixed method design in which the investigator gathers and analyzes quantitative data, and then uses a qualitative follow-up data collection and analysis to help explain the quantitative results. An explanatory sequential design was selected because 'this approach is ideal when one phase can contribute to the next phase and enhance the entire study' (Creswell et al., 2004, 10); and 'the results of the method first implemented can help to identify and refine the review question and/or the relevant outcomes of interest, to select the data, to develop a theory or hypothesis, or to inform the analysis of the other method' (Heyvaert et al., 2011). In this study, there was limited empirical work on E-Commerce in Tanzania (Nielinger, 2003) and therefore a quantitative understanding was necessary to provide the researcher with the E-Commerce phenomena status quo prior to embarking on the qualitative study. The quantitative research method used for data collection was the use of a questionnaire and the analysis was based on descriptive statistics to describe and discuss factors that affect E-Commerce adoption. The quantitative study was followed up with a qualitative study which employed interviews and observations for data collection. Interviews and observations allowed the researcher to be immersed in the context of the study because 'immersion in context is a hallmark of qualitative research methods and the interpretive perspective on the conduct of research' (Kaplan & Duchon, 1988, 572). This study employs semi-structured interviews with individuals because, firstly, they allow the respondents to explain their experience with E-Commerce, giving their own perspectives and meanings and, secondly, it is the type that is used the most in qualitative research (DiCicco-Bloom & Crabtree, 2006) in Information Systems (Myers & Newman, 2007). This mixed method

research design thus 'provided the flexibility to adapt the qualitative study to the findings from the quantitative study. Data analysis was performed using thematic analysis. As an analytical technique, thematic analysis has the power to report people's experiences, perspectives, and meanings, whilst examining the ways in which events, realities, meanings, and experiences come about (Braun & Clarke, 2006). With thematic analysis, 'emphasis is on the content of a text, "what" is said more than "how" it is said, the "told" rather than the "telling"' (Riessman et al., 2002, 217) and as such, 'useful for theorising across a number of cases finding common thematic elements across research participants and the events they report' (218).

The qualitative study was further complimented with the use of content analysis and the theory of communicative action of Habermas (1979; 1984: 1987) with the intention of ensuring the corroboration of data and to complement and more fully elaborate the findings by providing a richer, contextual basis for interpretation. The different methods employed in this study were meant to inform and supplement each other not only because they addressed different aspects of the E-Commerce phenomenon but also because they are taken from different research strategies (Feilzer 2010).

4.4 Ethical considerations

Ethics is an integral aspect of research which requires that the researchers maximise possible benefits from the research and minimise any harm and risk to the human subjects or participants (Oz, 1992). This emphasis is even more integral for the qualitative studies which require the observation of the human subjects in their natural environments. There is, thus, a relationship between the researcher and subjects being investigated. This creates issues of power which can exert pressure on the research process. To ensure ethical considerations are met, the researcher ensured that SMEs were firstly informed beforehand (via email, telephone or a face-to-face visit) of the purpose of the study. Key concepts were explained prior to data collection. This allowed participants to provide informed and voluntary consent. SMEs were made aware that participation in the research study was not mandatory but was based on their willingness to share their experience. Consent was sought from them either verbally or in writing. In most

instances, SMEs replied verbally. No SME was interviewed without permission. All information obtained was treated with confidentiality and participants in the study were given pseudonyms ($SME_{1, 2, 3}$) to protect their identity.

4.5 Conclusion

This chapter outlined the methodological approach adopted for operationalizing the study. The study uses two approaches, namely, quantitative and qualitative, to allow E-Commerce phenomena to be examined in different ways, thereby increasing the validity and understanding of the findings through a triangulation process. Whilst the quantitative pilot data sought SMEs' perceptions of E-Commerce, qualitative data sought to understand the origins of these perceptions and establish what influences SMEs to think in the manner they do about E-Commerce; and document analysis seek to offer a critical stance of the findings. Thus the rationale for mixing is that neither quantitative nor qualitative methods are sufficient by themselves to capture the trends and details of the situation, such as a contextual issues that influence SMEs' perception of E-Commerce that ultimately impact adoption and institutionalisation. However, when adopted together, both the quantitative pilot study and qualitative study complement each other and allow for more complete analysis. Following this methodological approach, the next chapter presents the findings obtained during the course of the study.

CHAPTER 5: PRELIMINARY QUANTITATIVE STUDY

5.1 Introduction

This chapter investigates organisational and environmental factors that affect E-Commerce adoption by SMEs in Tanzania so as to have a preliminary understanding of the E-Commerce status quo. The study is quantitative in nature because of the limited prior empirical work on E-Commerce in Tanzania (Nielinger, 2003).

The rest of the chapter is presented as follows: firstly, how the data was collected is explained in section 5.2. In doing so, the sampling techniques used, research instrument and the actual data collection process is discussed. This is followed by the data analysis and findings of the study in section 5.3. The discussion of the chapter is presented in section 5.4. The conclusion of the chapter is covered in Section 5.5.

5.2 Data collection

Data was collected from SMEs in Dar-es-Salaam – the region in Tanzania with the highest urban population and the cultural and economic hub of the country with about one half of the country's manufacturing sector being located there. It is also the region with the highest presence of ICT use and therefore does serve as a representative sample of Tanzanian SMEs. The research instrument used to elicit the data was developed from a selection of survey instruments used to determine the factors that affect E-Commerce adoption in developing countries, as shown in Table 4. An analysis of organisational factors leads to an evaluation of the degree to which an organisation has the awareness, business resources, owner support, governance, human and technology resources to adopt E-Commerce.

Environmental factors (Table 4) affecting E-Commerce adoption explain how external influences also have an effect on this. An investigation of external factors gives an indication of how ready (i) market forces, (ii) the government, (iii) supporting industries are in aiding E-Commerce (Molla & Licker, 2005).

	Constructs	Definition
Organizational Factors	Awareness (Teo et al., 2004; Molla and Licker, 2005)	Represents perception of E-Commerce technologies, business models, requirements, benefits and threats and projection of the future trends of E-Commerce and its impact
	Relative advantage (AlSukkar & Hasan, 2005; Scupola, 2009; Kaynak et al. 2005, 638;, Jianyuan et al. 2009; Ghobakhloo et al. 2011; Igau et al. 2011)	Degree to which the technology or the innovation is perceived to be better and will enhance the SME's performance, decrease transactional delays, result in improved efficiencies and communication with business partners.
	Compatibility (Au & Enderwick, 2000; Alam et al., 2008; Kshetri, 2010; AlNoor & Arif 2011; Othman et al., 2011)	The innovation's consistency with the SME's existing strategic objectives, values and norms, past experiences and needs
	Cost (Ho et al.2007; Othman et al. 2010; Teo at al. 2004)	Benefits from the adoption of an innovation - commensurate with the costs associated with the adoption of the innovation
	Image (Carter & Belanger, 2003; Lowry et al., 2008; Hua et al. 2009; Kuan et al. 2011; Zhang et al.2011)	Captures the perception that using an innovation will contribute to enhancing the social status of a potential adopter.
	Management Commitment (Teo et al.,2004; Molla and Licker, 2005; Wilson et al., 2008; Teo et al., 2009; Wang & Lin, 2009; Zhaofang, 2009; Hashim et al., 2010, Lin et al., 2010; Yu et al., 2010)	Support for E-Commerce from organisational owners. This refers to having a clear-cut E-Commerce vision and strategy championed by the SME owner
	Human Resources (Nnafie, 2002; Colle & Yonggong, 2002; Teo et al., 2004; Molla &Licker, 2005)	Availability (accessibility) of employees with adequate experience and exposure to ICT and other skills needed to adequately staff E-Commerce initiatives and projects.
	Technology Resources (Teo et al. 2004; Molla & Licker, 2005; Bao & Sun,2010; Lin et al.,2010; Pham et al., 2010)	ICT base of an organisation and the extent of its computerisation, the flexibility of existing systems and experience with network-based applications
	Business Resources (Molla and Licker, 2005)	Wide range of capabilities and most of the intangible assets of the organisation. It includes the openness of organisational communication; risk taking behaviour, existing business relationships, and funding to finance E-Commerce projects
	Governance (Molla & Licker, 2005; Posthumusa & Von Solms,2005;IT Governance Institute 2007; Liu et al,, 2010; Ayat et al., 2011; Devos et al.'2009,2012; Othman et al., 2011.)	The strategic, tactical and operational model organisations in developing countries put in place to govern their business activities and E-Commerce initiatives
Environmental Factors	Market Forces (Gibbs et al., 2002; Teo et al., 2004; Duncombe & Molla, 2006; Rodriguez-Ardura et al. 2008; Mohamed et al.,2009; Ghobakhloo et al., 2011; Abdulghader et al., 2011; Zhai,2011; Yang, 2012)	The assessment that business partners such as customers and suppliers allow for electronic conduct of business
	Institutional Readiness (Molla & Licker, 2005; Shih et al.; 2005; Boateng et al., 2008; Lin et al., 2011; Zhu & Thatcher, 2010)	Assessment of the preparation of the nation state and its various institutions to promote, support, facilitate and regulate E-Commerce and its various requirements;
	Supporting Industries (Mukti, 2000; Travica, 2002; Molla & Licker, 2005; Kurnia & Peng, 2008; Martinsons, 2008; Riyadh et al., 2009; Kapurubandara & Lawson, 2009; Abdulghader et al., 2011; Zhai 2011; Brown & Thompson, 2011)	Refers to the assessment of the presence, development, service level and cost structure of support-giving institutions whose activities might affect the E-Commerce initiatives of businesses in developing countries

Table 4: Factors known to affect E-Commerce in developing countries

Based on the literature, the research instrument was constructed as illustrated in Appendix 1. The first section captures demographic factors of gender, age, education,

industry type, organisation age, source of capital, and number of employees in the enterprise. The second part of the questionnaire used a five-point Likert-type scale to obtain SME's perceptions of the factors affecting E-Commerce adoption (Appendix 1). The scale required individuals to make a decision regarding their level of agreement, starting from 'strongly disagree' (1) 'to strongly agree' (5). The survey instrument was pre-tested on five SMEs prior to the real case conduct of the study. The pre-test results show that respondents were unsure of the differences between business resources, technology and human resources concepts. These terms were explained and differences highlighted during the second round of pre-testing the research instrument.

The Tanzania Bureau of Statistics was contacted via email and later in person to obtain the names of all SMEs in Dar-es-Salaam so as to provide the initial sampling frame. It did not have a database of SMEs operating in Dar-es-Salaam. The researcher was referred to the Swedish International Development Cooperation Agency (SIDA) which strives to 'create and sustain an indigenous entrepreneurial base through the promotion of and support to the development of SMEs by providing them with Business Development Services and Specific Financial Services on demand (SIDA 2007). SIDA provided the researcher with a list of 130 SMEs all of which were contacted via emails accompanied with the questionnaire survey. Ninety per cent of the emails bounced back. As far as the balance of the SMEs was concerned, there was no response from them after a month. The researcher therefore had to physically visit the 130 SMEs, 26 of which were not operating. Questionnaires were left with the secretary at 104 SMEs. Forty-one of these SMEs agreed to participate in the study, although five of them requested monetary compensation and were therefore ruled out of the study. A total of 36 SMEs participated in the study. Although the study was mainly quantitative, and the intention was that respondents answer in the absence of the researcher, the majority of them preferred to fill in the questionnaire in the researcher's presence. This usually led to a discussion of E-Commerce in the country and SMEs' concerns in this regard. Thus the study became a mixture of quantitative and qualitative responses.

5.3 Analysis and findings

The data analysis commenced by checking the data for completeness and eliminating those responses that were incomplete, erroneous or irrelevant. Three of the responses were

found to be incomplete and these were taken out of the study. The profile of each respondent and the organization is given in Appendix 4.

Data analysis was limited to descriptive analysis due to the small sample size. Specifically, the descriptive analysis consisted of the means to show a central tendency (location) of data; standard deviations to show the degree to which a response varies from the average score; correlational analysis; and maximum and minimum values. For ethical considerations, SMEs in this study were referred to by a pseudonym that consisted of the SME number or position in the database.

Thirty-three SMEs participated in this study. The findings show that E-Commerce is grouped into three major categories as depicted in Table 5.

Adoption status		Agree/ Strongly agree	Industry
No adoption	Have not considered E-Commerce.	18%	SME1,16,32,33-Insurance SME 15-Transport SME 27-Laundry services
Initial adoption	Have considered E-Commerce but only connected to the Internet with email but no web-site.	15%	SME11, 12- ICT SME 14- Engineering SME 28-Financial SME 29-Tourism & Entertainment
	Have a static website that publishes basic company information on the web without any interactivity.	46%	SME 2,19,22,23,31-Tourism & Entertainment SME 5,8,10,17-ICT SME 6,25-Media, marketing and Consulting SME 7,9-Engineering SME 13- Protection and safety SME 30- Manufacturing
Institutionalisation	Have an interactive web presence.	21%	SME 3,4,20,26 - Tourism & Entertainment SME 18,21- Manufacturing SME 24-ICT

Table 5: E-Commerce maturity level per SME

The first category is SMEs with no web-based E-Commerce (18 per cent). These were mainly situated in the insurance, transport and laundry industry. The second category consisted of initial adopters who were characterised into two groups: those who were connected to the Internet with email but no website (15 per cent) and those with a static web-site that publishes basic company information on the web without any interactivity (46 per cent). The final category was the 21 per cent of SMEs that had institutionalised E-Commerce – they had an interactive web presence that accepts queries, email and form entries from users.

5.3.1 Organisational factors associated with E-Commerce

Table 6 depicts the descriptive statistics for the organisational factors that affect E-Commerce adoption in Tanzania based on the 33 SME respondents. The sections that follow discuss each of the factors in detail.

	Descriptive statistics				ADO Correlation	Correlations: significant at p < .05
Construct	Mean	Std.Dev	Min	Max		
Awareness	3.9	0.9	1	5	0.20	0.303
Relative advantage	4.4	0.6	1	5	0.09	0.661
Compatibility	3.9	1	1	5	0.23	0.247
Cost	2.4	0.6	3	5	0.12	0.542
Image	4.4	0.8	4	5	0.19	0.313
Management commitment	3.8	0.8	1	5	0.17	0.378
Human resources	3.6	1.1	3	4	**0.48**	**0.011**
ICT Expertise	3.0	0	2	4	2.48	0.634
Technological resources	3.5	1.2	1	5	**0.40**	**0.033**
Business resources	3.7	0.8	1	5	**0.42**	**0.02**
Governance	3.2	1	1	5	**0.40**	**0.038**

Table 6: Descriptive statistics of organisational factors that affect E-Commerce

5.3.1.1 E-Commerce awareness

The general E-Commerce awareness population mean score is 3.9, implying that respondents are aware of E-Commerce benefits either through implementations of their partner organizations, or competitors' E-Commerce implementations. Despite the general awareness, the correlation analysis ($p = 0.303$) reveals that awareness was not significant enough to be associated with adoption. That is, greater levels of awareness did not necessarily translate to high levels of E-Commerce adoption maturity. The lack of association was because most SMEs had not witnessed an organization, whether a partner organization or competitor that had fully institutionalised E-Commerce and how such an organization realises the benefits associated with institutionalisation. E-Commerce was thus associated with initial adoption of merely having Internet with email and a website without interactivity.

5.3.1.2 Relative advantage

E-Commerce relative advantage had a mean score of 4.4 which is significantly high and shows that SMEs think that adoption of E-Commerce will provide relative advantage

over existing ways of meeting their need and this perception could potentially influence the attitude regarding use of adoption and institutionalisation of E-Commerce. A correlational analysis reveals that perceived relative advantage was not significantly related to E-Commerce adoption ($p = 0.661$). The lack of association is because SMEs's existing ways of meeting their communication and transaction activities was through mobile technology ($SME_{15,16,27}$); and SMEs that are non adopters and those at the initial maturity levels failed to comprehend how the E-Commerce benefits will provide relative advantage over mobile technology, the existing ways of meeting their need, given the low ICT penetration in their organization. Thus the relative advantage of using E-Commerce did not necessarily influence the progression to more sophisticated levels of E-Commerce maturity.

5.3.1.3 Compatibility

The mean score for E-Commerce compatibility was 3.9 which imply a moderate compatibility view of E-Commerce's compatibility with their organisation's existing values, past experiences, and needs. However, the qualitative findings indicated a general perception of incompatibility. A possible reason is that E-Commerce did not fit in with the organisation's values and beliefs on how to do business. SME values and belief lies in the use of bargaining in their business endeavours; and this was seen to be difficult to do with E-Commerce as SME_{27} a manager of a laundry related services explains in the qualitative statements:

> when a client walks into our shop, the price negotiation is the first thing that most of them do…this is before you even tell them of the price… Client conversations tend to start like this - "I am bringing in my things but the price man! Look kindly at the price". We are then able to easily negotiate and come to an understanding right there after we have both checked the laundry brought in. so the weight of the laundry is not always the issue because we have to put into consideration the water and electricity if necessary – these things are difficult to get by here… but how will I be able to do this kind of negotiation with computers, especially without seeing or knowing my client? I still think that is for wazungu [Europeans] – we are not there yet.

The correlational analysis shows that compatibility level was not significantly associated with E-Commerce adoption maturity level. This lack of association will be investigated in the next chapter to explain why compatibility did not influence SMEs' progression to a more mature E-Commerce adoption status.

5.3.1.4 Cost

The mean score for the cost involved with E-Commerce adoption and implementation was 2.4 which implies a perception of E-Commerce cost being exorbitant for their organisations. The correlation analysis reveals that perceived cost was not significantly associated with E-Commerce adoption maturity. The lack of correlation is possibly due to the high costs assosciated with investment in E-Commerce, specifically E-Commerce at the institutionalization phase. The cost for having Internet connections with email, or having a website without interactivity was perceived lower than the cost for investing in an interactive/transactive/intergrated E-Commerce. As such SMEs were able to minimally invest in E-Commerce but this investment did not translate into mature adoption levels because all SMEs perceived the costs to be far greater than the benefits. Progression to the next maturity level was therefore perceived as not worth the effort.

5.3.1.5 Image

The mean score for having an image associated with E-Commerce was 4.4 which implies that respondents recognised that a strong positive image was attached to E-Commerce. The correlation analysis reveals that perceived image was not significantly associated with E-Commerce adoption maturity. The implication is that although SMEs owners felt that the image associated with E-Commerce was of a prestigious nature; this realization did not necessarily translate to E-Commerce adoption maturity levels. A possible reason is that non adopters were able to adopt some form of E-Commerce so as to keep up the image of sophistication associated with E-Commerce either by only being connected to the Internet with email but no web-site; or by having a static website without any interactivity. These forms of connection were perceived affordable in terms of costs and resources. However, the grand image of having an E-Commerce website at an

linstitutionalization phase was considered expensive and therefore few SMEs were able to transcend to such maturity level in order to attain such an image.

5.3.1.6 Management commitment

The findings show that management support was at a mean score of 3.8 which implies that respondents' perceived a moderate cmanagement commitment in support of E-Commerce. The qualitative findings however indicated a general positive perception of mobile technology management that tended to undermine E-Commerce endeavours as SME_{27} explains:

> I support the use of technology but they are so expensive to have. I can only afford a computer for myself and we all alternate in using it here when necessary. But anyway, we prefer to use mobile phones because we all afford it.

The correlation analysis reveals that management committment was not significantly associated with E-Commerce adoption maturity. The lack of association in correlation analysis is partly due to the lack of management championship for E-Commerce at the more mature levels of E-Commerce where financial investment becomes necessary; and the increased use of mobile technology for business endeavours which tended to substitute the use of desktop computers and related E-Commerce technologies (SME_{15}).

5.3.1.7 Human resources

The human resources mean score was 3.6, an indication that respondents perceived a neutral or undecided availability (accessibility) of employees with adequate experience and exposure to ICT in their organisation. The correlation analysis reveals that high perceptions of human resource were significantly associated with E-Commerce adoption maturity. SMEs with greater perception of quality human resources for E-Commerce had more mature E-Commerce adoption status because they were utilising E-Commerce technologies and therefore in need of employees who are computer literate, who do not find the skills needed to implement and use E-Commerce too complex, and who also have

unrestricted access to computers. Thus human resources was an organizational factor that influenced the progression to adoption.

5.3.1.8 ICT expertise

The ICT expertise means score was 2.48, an indication that respondents disagreed on the availability (accessibility) of employees with adequate experience and exposure to ICT in their organisation, and also on the availability of skills needed to adequately staff E-Commerce initiatives and projects. The correlation analysis reveals no significant association of ICT expertise and E-Commerce adoption maturity. Possible reason is the lack of ICT expertise required to implement E-Commerce at all maturity stages; and if ICT expertise is available, it is usually exuberantly high for SMEs to afford. ICT expertise therefore does not necessarily translate to adoption and institutionalization of E-Commerce in the Tanzanian sample investigated.

5.3.1.9 Technological resources

The findings show that the mean score was 3.5, indicating that respondent had a general neutral or undecided perception regarding having sufficient technological resources to implement E-Commerce. That is, although they were fairly computerised with LAN and WAN, they indicated the lack of high bandwidth connectivity to the Internet and other resources to implement E-Commerce. The correlation analysis reveals that technological resources availability was significantly associated with E-Commerce adoption. An improved accessibility to technological resources could therefore lead to adoption.

5.3.1.10 Business resources

The average mean score for business resources was 3.7 – an indication that most respondents had a slightly higher than neutral or undecided feel about their business resources. These include the intangible assets of the organisation such as open communication and trusting relationships, and risk taking behaviour or policies to encourage E-Commerce. The correlation analysis reveals that greater levels of business resources were significantly associated with E-Commerce adoption. SMEs that were risk

takers and perceived higher access to intangible assets had more mature E-Commerce adoption status because they were more conscious of the benefits of E-Commerce.

5.3.1.11 Governance

The governance means score was 3.2, indicating that respondents felt that there was a neutral or undecided E-Commerce strategic, tactical and operational model in place to govern business activities and E-Commerce initiatives. The correlation analysis reveals that greater levels of E-Commerce governance were significantly associated with institutionalization of E-Commerce. SMEs with higher levels of governance perception had a more mature adoption status, making governance one of the organizational factors that influenced the progression to adoption and institutionalization of E-Commerce.

5.3.2 Environmental factors associated with e-commerce

Table 7 depicts the descriptive statistics of environmental factors that affect E-Commerce adoption in Tanzania as per the 33 SME respondents. The sections that follow discuss each of the factors in detail.

Construct	Mean	Std.Dev	Min	Max	ADO Correlation	Correlations: significant at p < .05
Market Force e-Readiness	3.7	1.2	1	4	**0.42**	**0.02**
Supporting Industries e-Readiness	2.9	1.1	1	5	**0.42**	**0.024**
Government e-Readiness	3.3	1.1	1	4	0.08	0.678

Table 7: Descriptive Statistics of environmental factors that affect E-Commerce in Tanzania

5.3.2.1 Market force e-Readiness

The average mean score for market force e-Readiness was 3.7 – an indication that SMEs had a generally higher than neutral or undecided perception as to the e-Readiness of both the customers and business partners to do business on the Internet. The correlation analysis reveals that high levels of market force e-Readiness were significantly associated with adoption of E-Commerce. SMEs with more mature adoption status perceived local consumers and suppliers as being ready for E-Commerce. The more SME owners

perceived customers and business partners ready to conduct business on the Internet, the greater their intention to adopt and institutionalisation E-Commerce. Thus although the correlation shows a significant association, institutionalization was limited because of the perception that E-Commerce was not compatible with the local social and technological context as SME_{26} explains in the qualitative statements:

> my foreign consumers are ready, yes because they can easily log on our website and place an order…but you see the problem usually comes from us because our site is usually having problems. The internet is sometimes down or no electricity…so how can people here be fully ready for the internet business – it's difficult. Our people here are not ready – they don't regard tourism first of all as necessary.

5.3.2.2 Supporting industries e-Readiness

Supporting industry e-Readiness scored a mean average of 2.9 which indicates that respondents do not believe there is support from the industry with respect to E-Commerce. The correlation analysis reveals that high perceptions of the availability of E-Commerce support-giving institutions were significantly associated with the adoption of E-Commerce. The availability of such institutions would therefore encourage SMEs to transcend to more mature levels of E-Commerce. However, SMEs in this study, observed a low presence of support-giving institutions for E-Commerce initiatives of businesses and this was a contributing factor to the lack of institutionalisation of E-Commerce. This implies the need for greater investment in infrastructure to facilitate E-Commerce adoption amongst SMEs, and for the promotion of the ICT services sector, which can provide support for SME E-Commerce ventures.

5.3.2.3 Government e-Readiness

Government e-Readiness scored an average mean score of 3.3, an indication that respondents were neutral or undecided on the preparation of the nation state and its various institutions to promote, support, facilitate and regulate E-Commerce and its various requirements. The correlation analysis reveals no significant relationship between

government e-Readiness and E-Commerce adoption maturity. The motivation for the lack of correlation is the perception that there isn't a conducive environment to conduct business on the Internet, and no effective laws to combat cybercrime and protect consumer privacy. The presence of a conducive environment would also not necessarily imply SMEs transcending to the next maturity stage because the government did not demonstrate strong commitment to promote E-Commerce.

5.4 Discussion

The findings in this section of the study show that organizational factors that influenced the progression to E-Commerce maturity levels were human resources, the availability of technological resources, business resources, and governance. The availability of these resources signified SMEs' ability to transcend to the next maturity levels of E-Commerce. There was however a general moderate awareness of E-Commerce, the perception of relative advantages that the technology provides over existing means of transacting, and a strong positive image attached to E-Commerce. Management commitment was also perceived to be moderate but despite this, and the awareness and understanding of what E-Commerce can achieve, the majority of respondents still remained at the initial adoption phase and others had failed to adopt E-Commerce. This is contrary to expectation since perceived relative advantage does influence the attitude toward using an innovation (AlSukkar and Hasan, 2005). Awareness of the perceived benefits and management commitment should have according to theory translated non adopters to adopters and the initial adopters to embark on more mature E-Commerce levels. The next chapter will investigate these contradictions of theory further.

One of the environmental factors that influenced the progression to E-Commerce maturity level was the availability of business partners and consumers who were willing and able to electronically conduct business (market force e-Readiness). Since consumer purchasing power and demand to buy online is one of the determinants for E-Commerce (Al Ghamdi et al., 2011); findings in this section of the study show that progression of SMEs to a more mature E-Commerce levels is hampered by the lack of e-Readiness of consumers. An additional environmental factor that influenced the progression to E-Commerce maturity level was the presence of support-giving institutions for the conduct

of E-Commerce. SMEs general perceptions were that such support giving institutions were not strong. These findings mirror those of Riyadh et al. (2009) and Zhai (2011) who observe that most commercial and financial institutions in developing countries are not mature enough to handle secure and reliable electronic transactions and this poses as one of the factors that hampers SMEs' adoption of electronic transactions in developing countries. Institutional readiness to promote, support, facilitate and regulate E-Commerce did not influence the progression to E-Commerce adoption. A possible reason is the high prevalence of mobile technology use that is fast replacing the possibility of wired E-Commerce; and that there is insufficient readiness on the part of government for E-Commerce. Hence it features as neither a promoter nor inhibitor of E-Commerce adoption amongst SMEs. Greater vigour by government in addressing these issues should have the desired effect of facilitating more sophisticated forms of E-Commerce among SMEs.

5.5 Conclusion

The purpose of this chapter is to investigate organisational and environmental factors that affect E-Commerce adoption by SMEs in Tanzania so as to have a preliminary understanding of the E-Commerce status quo there. The findings reveal that organizational factors that influenced the progression to E-Commerce maturity are human resource, technological resource, business resource, and governance. Respondents were aware of the benefits of E-Commerce although the degree of this differed. Awareness did not translate to E-Commerce maturity levels as anticipated and this observation will be explored in the next chapter. Mobile technology usually featured as the alternative and in some case complimentary technology for E-Commerce. Since mobile technology was not included in the research instrument, the next chapter will explore its significance in the Tanzanian SME context.

Environmental factors that influenced the progression to E-Commerce maturity levels was market force e-Readiness and supporting industry e-Readiness. The quantitative findings show that consumers and suppliers were not ready for E-Commerce but the qualitative findings indicate that local consumers and suppliers were the ones who were not ready. To clarify this further, the next chapter will investigate the underlying reason as to why local consumers were not e-Ready for E-Commerce. Supporting institutions were also regarded as negligible and this impacted negatively the intentions to advance to

more E-Commerce maturity levels. This implies the need for greater investment in infrastructure to facilitate E-Commerce adoption amongst SMEs, and for the promotion of the ICT services sector, who can provide support for SME E-Commerce ventures. Government e-Readiness was perceived as low and did not influence the progression of E-Commerce to a more mature level. It may be that there is insufficient readiness on the part of government for e-commerce. Hence it features as neither a promoter nor inhibitor of E-Commerce adoption amongst SMEs. Greater vigour by government in addressing these issues should have the desired effect of facilitating more sophisticated forms of E-Commerce among SMEs.

The main limitation of this component of the study was the low response rate for a quantitative study. The limited response was as a result of respondents who wanted some form of monetary compensation, some who would not respond and some whose responses were unusable. In addition, the limited sample size did not necessitate the conduct of validity and reliability tests. However, it should be noted that this component is not the core of the study but serves as the preliminary exercise from which the E-Commerce status in Tanzania can be understood. This means that the results cannot be generalisable but still are useful in laying down the foundation for a further qualitative study.

CHAPTER 6: MAIN QUALITATIVE STUDY

6.1 Introduction

This chapter uses the quantitative study as a preliminary basis from which the research instrument for the data collection was constructed. It reports on the environmental and organisational factors that affect E-Commerce as perceived by SME agents' experiences and realities. Interviews are used as a data collection technique to examine how these experiences and realities come about. This is an important step prior to structuration analysis, because these factors constructed from these experiences and realities become the practices by which E-Commerce becomes socially constructed by SMEs in LDCs. This chapter, therefore, provides a foundation for understanding how E-Commerce is typically made sense of by SMEs and how this sense-making is produced, sustained and affected by environmental and organisational conditions and resources.

The chapter is arranged as follows: Section 6.2 describes the data collection process and pays attention to the research instrument used, the sample used in the study and how the data was collected from the sample; Section 6.3 describes the analytical process followed. The analysis was done using qualitative methods, specifically thematic analysis so as to identify emergent themes that characterised environmental and organisational practices by which E-Commerce becomes socially constructed in SMEs in LDCs; Section 6.4 presents the findings of the study; Section 6.5 discusses the findings; and Section 6.6 concludes the chapter.

6.2 Data collection

Data was collected using interviews. Qualitative interviews remain one of the most common and the most important data gathering tools as they have the power to examine that which is not ordinarily on view and that which is looked at, but seldom seen (Myers & Newman, 2007). They 'contribute to a body of knowledge that is conceptual and theoretical based on the meanings of life experiences for the interviewees' (DiCicco-Bloom& Crabtree, 2006, 314). There are three main types of interview: structured,

unstructured, or semi-structured. Structured interviews tend to engage the participant in conversation about the subject of interest. This engagement, however, is strictly in accordance with predetermined questions prepared beforehand, thus allowing little room for improvisation. Unstructured or semi-structured interview are characterised by a set of predetermined open-ended questions, with other questions emerging from the dialogue between interviewer and interviewees – thereby allowing for improvisation. This form of interviewing encourages respondents to express their views at length, thereby bringing their perception of reality to light. These are the most common form of interviews used in qualitative studies and can occur either with an individual or in groups (DiCicco-Bloom & Crabtree, 2006). It is for this reason that this study employs semi-structured interviews so as to allow the respondents to explain their experience with E-Commerce, giving their own perspectives and meanings.

Structuration theory was used as a lens for the study and the constructs of structures of signification, domination and legitimation were particularized into the E-Commerce literature presented in Chapter 2. The actual particulatization was done in Chapter 3. The motivation for particularization was based on the fact that 'substantially stronger results may be obtained if researchers particularize their research instruments' (McFarland & Hamilton, 2006, 442). Based on this particularization, an interview guide (as shown in Appendix 2) was constructed. The interview guide consisted of an open-ended questionnaire used to obtain this information so as to allow the researcher the opportunity to observe, record and ask. This is important because a qualitative study relies not only on asking questions but heavily on observations which

> 'involves watching and recording what people say and do…. as it is impossible to record everything, this process is inevitably selective and relies heavily on the researcher to act as the research instrument and document the world he or she observes (Mays & Pope, 1995b, 183).

Data collection started in May 2010. Emails of the interview were sent to each SME previously contacted in the quantitative study. Although a rapport between the researcher and SME had been established during the course of the quantitative study, only one of the SMEs replied to the email. This meant that the researcher had to visit the SMEs once again and a new appointment date was set with each SME. The interviews

were conducted between May and July 2010. It was not possible, on account of availability, to interview only managers/owners of the SMEs, so technicians and employees not necessarily in an IT role were interviewed when the SME owner was absent. A total of 33 SMEs were revisited. However, one SME (SME_{27}) had closed down, reducing the research participants to 32. For triangulation purposes, data was collected from SME environmental stakeholders so as to obtain corroborating evidence (Miles & Huberman, 1984): Government institutions (1 respondent) - from the Department of Trade and Industries; and supporting industries - the banks (1 respondent) and educational institutions, specifically their ICT departments (1 respondent). The profile of the interviewees is presented in Appendix 4. These participants were regarded as key informants who need to be included because they connect with the political context of SMEs (Miles & Huberman, 1994b). A targeted duration of each interview was set at thirty minutes to ninety minutes to ensure that participants were not under pressure in responding to the interview, thereby ensuring the credibility of the information supplied. Note taking and digital recording were used to record each interview. A total of 35 interviews were conducted (3 from each SME, and a single interview from government, bank and education institute). It is important to note that sampling in qualitative research usually relies on small numbers with the aim of studying the phenomena in depth and in detail (Miles & Huberman 1994b).

6.3 Data analysis

The qualitative data analysis followed a thematic analysis approach in which the corpus was subjected to a rigorous pattern identification process of reviewing the corpus, making notes, and sorting the data into more structured categories (themes) that can explain the data. Thematic analysis was selected as an analysis method because it has the power to report people's experiences, perspectives, and meanings, whilst examining the ways in which events, realities, meanings, and experiences come about (Miles & Huberman 1984; Braun & Clarke, 2006). This analysis focuses on identifying themes and patterns that emerge as being important to the description of the phenomenon through a process of carefully reading and re-reading the data (Daly et al., 1997; Rice & Ezzy, 1999, 258). It is a process that seeks 'to unearth the themes salient in textual data' (Attride-Stirling, 2001,

387). Themes can be identified in two main ways: inductive or using a theoretical model. Themes generated from an inductive approach follow a process in which data coding is done 'without trying to fit it into a preexisting coding frame, or the researcher's analytic preconceptions' (Braun & Clarke, 2006, 83). The process is highly data-driven to allow 'research findings to emerge from the frequent, dominant or significant themes inherent in raw data without the restraints imposed by structured methodologies' (Thomas, 2003, 2). Themes arising from a theoretical frame undergo a process in which data is coded to fit the researcher's theoretical or analytic interest in the area and his or her preconceptions and assumptions. Many researchers have provided guidelines on how to use thematic analysis. This study has adopted Braun and Clarke's (2006) guidelines depicted in Table 8.

Phase	Action	Description of the process
1	Familiarsing yourself with your data	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas
2	Generating initial codes	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code
3	Searching for themes	Collating codes into potential themes, gathering all data relevant to each potential theme
4	Reviewing themes and relationships	Checking if the themes work in relation to the coded extracts and the entire data set
5	Defining and naming themes	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells
6	Producing the report	Selection of vivid, compelling extract examples, analysis of selected extracts, relating back of the analysis to the research question and literature

Table 8: Phases of thematic analysis (Braun & Clarke, 2006, 87)

The analysis procedure firstly followed an inductive coding approach. Firstly, important moment in the data were identified and coded before associating any interpretation to it (Fereday & Muir-Cochrane, 2008). During analysis the study employed an iterative and reflexive process as recommended by Tobin and Begley (2004) as the overarching principle of 'goodness'. Goodness is one application of rigor associated with locating situatedness, trustworthiness and authenticity. Goodness is therefore 'an overarching principle of qualitative inquiry and an interactive process that takes place throughout the study' (Tobin & Begley, 2004, 391). After reading the data, and identifying the themes, they were refined and given meaning by associating them with the theoretical E-commerce literature – specifically organizational and environmental factors. In so doing, the study followed a deductive approach, not necessary in identifying themes but in the

groupings of the identified themes. The following section explains the procedure followed in the theme generation process.

6.3.1 Familiarising oneself with the data

Understanding the data is the first step of analysis. To accomplish this, the audiotape recordings were listened to prior to transcription with the purpose of obtaining grounding in each interview session. Following this process, each qualitative interview script was transcribed verbatim, taking into consideration contextual information and nonlinguistic observations, such as facial expressions, body language, setting descriptions, vernacular expressions, and emotions (McLellan et al., 2003). Interview scripts in Swahili were translated into English by the researcher before transcription.

After each interview was transcribed and typed in MS Word, it was printed for easier reading and soft backups were made. The researcher then went through a process of repeated reading of the data to identify list of ideas about what is in it, and what is interesting in the context of the E-Commerce phenomena – specifically, organisational and environmental factors that affect E-Commerce. The constructs were identified from reading the data. Each data extract read was matched to the theory constructs of factors affecting E-Commerce adoption in developing countries – organisational and environmental factors. This process was done in Microsoft Excel for coding purposes and the data was formatted into data tables, as shown in Figure 11. The first column represents the factors affecting E-Commerce adoption in developing countries (in this instance, environmental factors), the second is a unique speaker ID, and the third c is used for the actual utterances of the interviewer and participants. The moderator questions are in bold typeface to make them more easily visible.

Construct	Moderator	Do you transact using E-Commerce and what factors makes it possible or act as hindrances to the use of E-Commerce
Environmental factors	SME1	I don't think the market is ready because most people in our industry rely on the mobile phone....they are not ready for computers and all that...but prepared for mobile use. .un-readiness is cause by the lack of local industry support for ICT
	SME2	We have a website but it was developed by an outsourced company because we can't manage everything and website development is not where our speciality lies. Anything that we can't do we outsource, even though those companies take advantage of our lack of knowledge and tend to overcharge. But we face internet reliability problems and so out website is usually not up and running all the time so we always resort to email. Besides most of clients are foreign...the locals do not see the need to go to a website just to tour the country and in fact they don't use our services at all... most of them don't know how or even where to go and access except internet cafes - but how many can afford going to internet cafe - tell me?
	SME3	You see most of us are very poor compared to these people who use these cards [credit/debit cards]. There are Tanzanians who have the money and who use these cards but the majority of us, we cannot....that's the way it is. I have never even tried to think of getting one. So most payment here is via a mobile phone - that's how we do E-Commerce locally. The customer is able to book their stay online but they cannot pay immediately online usually cause of internet reliability. They can send by bank transfer or even via debit cards for local clients.

Figure 11: Formatting the data into data tables

6.3.2 Generating initial codes

The researcher reread the data repeatedly after which it was organised into meaningful groups by identifying repeated patterns (themes) across the data set. This process led to the initial code book reflected in Figure 12. This process was done in an effort to reduce raw information into smaller units, such as categories or themes. For example, it was noticed how an SME (SME_2) felt that local consumers were not ready for online transactions because 'most of them don't know how or even where to go and access except internet cafés - but how many can afford going to internet café - tell me?' This SME associated access to computers and skills as a prerequisite to readiness of the local consumer. This became one of the initial themes which became known as 'Local customers not ready for internet transactions'. SME_3 associated readiness with having the financial means to use E-Commerce. The perception was that most consumers did not possess the financial capacity to transact online due to 'poor personal economic circumstances'. This understanding also formed a new theme associated with consumer income, which became known as 'Consumers income low for internet transactions'.

Construct	Initial Theme	Data extracts
Environmental Factors	Local customers not ready for internet transactions.	Besides most of clients are foreign…the locals do not see the need to go to a website just to tour the country and in fact they don't use our services at all… most of them don't know how or even where to go and access except internet cafes - but how many can afford going to internet cafe - tell me? (SME2)
	Foreign customers ready	There is no E-Commerce here the way it's supposed to be. The only E-Commerce taking place is via mobiles. People are scared to be in the ICT industry or become ICT experts because there isn't a market for that here(SME12)
	Consumers income low for internet transactions	You see most of us are very poor compared to these people who use these cards [credit/debit cards]. There are Tanzanians who have the money and who use these cards but the majority of us, we cannot….that's the way it is. I have never even tried to think of getting one. So most payment here is via a mobile phone - that's how we do E-Commerce locally. The customer is able to book their stay online but they cannot pay immediately online usually cause of internet reliability. They can send by bank transfer or even via debit cards for local clients (SME3)
	Lack of awareness	the kind of E-Commerce of paying and buying online, that you are saying, I haven't seen any such awareness of people here being conscious of the importance of doing business online like that (SME6) …when I am on the internet, I see very few people from east Africa and Tanzania specifically online….I see people from R.S.A, but not in Tanzania….they are not aware how to put their products online and advertise…they are not aware of how to utilise the internet for their own advantage (SME7-) But the lack of motivation is because computers are simply not part and parcel of people's agenda…even those who are in the workplace…if it is, it is used not as a tool for efficiency and effectiveness, but for gaming and social networking(SME18)

Figure 12: Extracts from the initial codebook

SME_7 indicated a lack of awareness of E-Commerce and ICTs in general in the local consumer. To substantiate these claims, themes across SME interviews were sought and it was established that various SMEs agreed to these sentiments. For example it was perceived that 'computers are simply not part and parcel of people's agenda…even those who are in the workplace…if it is, it is used not as a tool for efficiency and effectiveness, but for gaming and social networking' (SME_{18}). This became one of the initial themes which was called 'Lack of awareness'.

6.3.3 Searching for themes

Using the initial themes, the researcher identified those that were both articulated repeatedly and coded to describe the same incident. Such initial themes were then grouped to form an overarching theme in column 1 of Figure 13. A definition of the theme is given in column 2, subthemes that emerged to form the overreaching theme are in column 3, and data extracts used as examples to support the derivation of the subtheme are in column 4. For example, initial themes 'Local customers not ready for internet transactions', 'Consumers income low for Internet transactions' and 'Lack of awareness',

were analysed. It was noted that they were describing the same incidence of a lack of local consumer readiness for E-Commerce. These initial themes were then grouped together to form an overarching theme in column 1 which became known as 'Lack of consumer e-Readiness for E-Commerce'.

Theme	Description	Subtheme	Data Extracts
Lack of consumer e-Readiness for E-Commerce	Local consumers are not ready to adopt E-Commerce due to lack of awareness, skills and access to computers	Local customers not ready for internet transactions.	most of clients are foreign...the locals do not see the need to go to a website just to tour the country and in fact they don't use our services at all... most of them don't know how or even where to go and access except Internet cafes - but how many can afford going to Internet cafe - tell me? (SME_2).
		Consumers income low for internet transactions	Normal Tanzanian do not have these cards (debit/credit) here because they are expensive to have. There are Tanzanians who have the money and who use these cards but the majority of us, we cannot...that's the way it is. I have never even tried to think of getting one (SME_3).,
		Lack of awareness	When I am on the internet, I see very few people from East Africa and Tanzania specifically online. They are not aware how to put their products online and advertise...they are not aware of how to utilise the internet for their own advantage ($SME_{7)}$. Computers are simply not part and parcel of people's agenda...even those who are in the workplace...if it is, it is used not as a tool for efficiency and effectiveness, but for gaming and social networking($SME_{18)}$.
Lack of support from the industry	Private institutions, such as banks, IT firms and IT education institutions, not supportive of SMEs' endeavours to adopt E-Commerce	No incentive by banks for SMEs	We are also trying to figure out a way to deal with the banks on this matter because banks are also not keen - they also do not issue credit card easily and even if they do, we can't afford them (SME_6).
		Bank resistance to E-Commerce	
		Lack of support from big IT companies	...and the reason is because we don't have many companies that are diversified in the different fields – and even for those available companies, not all companies accepts students for training, it's an issue ($SME_{7)}$.
		Poor service from ISP	...and sometimes there is no internet completely...and you have to stay 2-3 days and the providers haven't solved the problem....sometimes the provider can't solve the problem immediately because maybe a tree fell on his cables etc....we have many providers but the main one is TTCL...their connection is not as we would like it to be....at one time, its fast...other times its slow...confusing really....you can never be sure of it.! (SME_{13}).
		Lack of ICT expertise	There is no ICT expertise readily available ... just obtaining ICT training is expensive in comparison to other courses for some obvious reasons such as use of internet, technologies etc.(SME_{14}).

Figure 13: Searching for themes

A theme in this instance is described as a unit derived from SME patterns of conversational topics around the E-Commerce phenomena, and these patterns recurred across SME interviews. The identified theme of 'Lack of consumer e-Readiness for E-Commerce' is able to explain the most salient influences on E-Commerce adoption and institutionalisation from the SMEs' perspectives. This theme enabled the researcher to explain that SMEs' lack of knowledge about E-Commerce is related to the lack of

consumer e-Readiness. Similarly, data occurrences related by SME_6 in Figure 13 fitted under the code 'No incentive by banks for SMEs' while the data incident related by SME_7 fitted under the code 'Lack of support for ICT from big IT companies'; data occurrences related by SME_{13} fitted under the code '' related by SME_{14} fitted under the code 'Lack of ICT expertise'. When these codes were grouped, they formed an overarching theme in column 1, which we called 'Lack of support from the industry'. The use of this theme explains that SMEs' ongoing knowledge about E-Commerce is related to the availability and readiness of the private industry to provide the necessary support (financial, knowledge and experience); and this support could lead them (SMEs) to adopt and institutionalise E-Commerce. Respondents in this study, therefore, view the 'lack of support from the industry' as one of the salient influences on E-Commerce adoption and institutionalisation.

6.3.4 Reviewing themes

During the review of the themes each candidate theme was analysed in the following manner so as to ensure that 'data within themes should cohere together meaningfully, while there should be clear and identifiable distinctions between theme' (Braun & Clarke, 2006, 91 The researcher first of all identified enough data to support each theme and in instances when this was not the case, the theme was not discarded but considered as being representative of a specific sample. Secondly, themes that spoke about the same idea were identified and then collapsed together to form an overarching theme. For example, an analysis of the data in Figure 14 reveals the following: that the themes 'Irrelevant and incomprehensive ICT Policy for E-Commerce', 'Lack of government commitment to ICT education and awareness to support E-Commerce', and 'Lack of government commitment to specific ICT support' recurred as themes that had enough data occurrences necessary to support them (see column 5).

Reviewed Theme	Theme	Description	Subtheme	Data incidents	Data extracts
Lack of institutional e-Readiness	Irrelevant and incomprehensive ICT Policy for E-Commerce	ICT policy not context specific to address SME needs, not made public and fails to support E-Commerce endeavours, specifically security due to its incomprehensive ness	ICT policies not comprehensive for example to cover security reasons	9	You mention the ICT policy, I think we here are ready to go online but the country, the government is not in terms of their policies. For example, online payment security and privacy issues are not clear for me to make that big decision to take my company fully online based (SME_{26}).
			Minimal ICT policy awareness	33	What policy? I am not sure what you are talking about and I have not heard of it. Yes, we attend government meetings and their help in starting a business but policy, what policy? (SME_1).
			Policies crafted not implemented	9	They don't even listen to our problems, they think they know them but they don't. For example, what have they implemented in the ICT policy that helps us as SMEs? Nothing! That policy is a show to the donors that we do have one (SME_{13}).
			ICT Policy does not address SME needs	2	
	Lack of government commitment to ICT education and awareness to support E-Commerce	Government's failure to ensure awareness of ICTs among its public, and to support SMEs towards adoption of E-Commerce	Government lack firm commitment and support for ICT education	4	Although ICT has been around, its education, use or practices in people's lives has been minimal – as they say, that is for the "wazungu" (Europeans). There is no awareness and the government isn't making any effort to do so. They like saying that they are doing something but what has been done in practice? Tell me. It's all on paper somewhere, isn't it? But what have they done (SME_{30}).
			Government should subsidies ICT education	3	Is it ensuring that ICT is enhanced, no? is it helping to subsidise ICT education – no, despite them knowing that ICT education is expensive here (SME_{31}).
			High ICT Training costs	9	I always feel that computer courses are more costly than other subjects (SME_{22}).
	Lack of government commitment to specific ICT support	Government's failure to provide ICT support in terms of training and financial support	Lack of government ICT support	14	The government says its supports SMEs in their talk shows but in reality it's not true. In this street alone, I don't know of any that received such a grant. In fact even in the whole province. So what are they saying? Just by telling me, "oooh please read this pamphlet on how to manage your business" is not good enough - I need financial assistance to kick start myself in the ICT industry properly (SME_{25}).
			Government training not ICT specific	4	
			Lack of government financial support	13	

Figure 14: Reviewing themes

The theme 'Irrelevant and incomprehensive ICT Policy for E-Commerce', for example, had a total of 53 data occurrences, constituted as follows: nine describing how the ICT policy was not comprehensive enough; all narrating minimal ICT policy awareness; nine stating that policies crafted but not implemented; and two how the ICT policy does not

address SME needs. It was clear that all themes spoke about the same idea of government not being supportive of E-Commerce in one way or the other, including training, or financial assistance. These themes were then collapsed into one theme which was named 'Lack of institutional e-Readiness' in column 1.

6.3.5 Defining and naming themes and producing the report

Each candidate theme was then refined further with the purpose of identifying its objective, specifically what data it conveyed. This process required all reviewed themes to be re-checked against the entire data set for validity, relevance and coherence; and also mapped back to the factors affecting E-Commerce (Chapter 2). Six themes were found to be acting as organisational factors affecting E-Commerce in Tanzania, and five themes acted as environmental factors. Table 9 shows the results which are discussed in the following section. The findings are presented as follows: first a generalization is given and then it becomes supported with a text segment from a specific interview (Miles & Huberman 1994). Although the qualitative analysis findings are generalized (Miles & Huberman, 1991), the generalization is based on individual experience which is in contrast to 'the nomothetic generalizations provided by statistical analyses' (Ayres et al., 2003).

Theme		Description
Organisational	Minimal management support for web based E-Commerce.	Limited financial capacity to implement E-Commerce and support mobile use.
	Lack of human resources.	Lack of basic ICT literacy skills throughout the organisation.
	E-Commerce awareness.	Perception and understanding of E-Commerce.
	Lack of technological resources.	Lack of ICT's resources necessary to adopt and institutionalise E-Commerce
	Lack of business resources.	Limited capabilities to adopt and institutionalise E-Commerce.
	Governance	The strategy formulated to ensure adoption of E-Commerce and preliminary institutionalisation.
Environmental	Lack of consumer e-Readiness for E-Commerce.	Local consumers are not ready to adopt E-Commerce due to lack of awareness, skills and access to computers.
	Lack of support from industry.	Private institutions, such as banks, IT firms and IT education institutions, not supportive of SMEs' endeavours to adopt E-Commerce.
	Support from industry.	Mobile service providers.
	Lack of institutional e-Readiness.	Government's failure to ensure awareness of ICTs among its public, and to support SMEs towards adoption of E-Commerce.
	Socio-cultural norms.	Presence of both formal and informal practices that affect E-Commerce development.

Table 9: Factors affecting E-Commerce in Tanzania

6.4 Findings

6.4.1 Overall adoption

32 SMEs were interviewed and all were categorised into three criteria, namely, 'No web-based E-Commerce', that is, SMEs who have not yet adopted any form of web-based E-Commerce; 'Initial adopters', to describe SMEs that are connected electronically, or have a static web presence; and 'Institutionalisation' to describe SMEs that have gone beyond having a static website to having an interactive, transactive and an integrated web presence. The three different categories are shown in Table 10. The findings are similar to the quantitative findings with an exception of one SME_{27}, which was no longer in existence. Thus in the qualitative study, the total number of SMEs that had not adopted E-Commerce was five as opposed to six as in the quantitative study. These were SMEs in the insurance sector, and transport industry and they all relied on mobile phones.

E-Commerce maturity level		Industry	Total [32]
No web based E-Commerce (Mobile)		SME1,16,32,33-Insurance	5
		SME15-Transport	
Initial adopters	Email/ Mobile	SME11,12 – ICT	20
		SME14 – Engineering	
		SME28 – Financial	
		SME29 - Tourism & entertainment	
	Static websites/ Mobile/ Email	SME2,19,22,23,31 - Tourism & entertainment	
		SME5,8,10,17 – ICT	
		SME6,25 - Media, marketing and consulting	
		SME7,9 – Engineering	
		SME13 - Protection and safety	
		SME30 – Manufacturing	
Institutionalised	Interactive websites/ Mobile/ Email	SME3,4,20,26 - Tourism & entertainment	7
		SME18,21 – Manufacturing	
		SME24 – ICT	

Table 10: SME's E-Commerce maturity level

6.4.1.1 Maturity level: no-E-Commerce adoption

SMEs with no E-Commerce were aware of E-Commerce but were not interested in its adoption. They all indicated that although they have seen other businesses use computers

and ICTs in their operations, they remained unsure of the benefits derived from such use as SME_{16} explains:

> my neighbour is in the tourism business and he has computers. But I don't know how he makes money because his computers have problems most of the time and he complains of the costs he has to incur in repairs and he even says when electricity is not there, which is regular here, he can't use the computer. So how or when does he make business? I know he can easily communicate with people in Europe easily with the computer, but so can I with my mobile.

SMEs in this category associated computers with the ability to communicate, specifically long distance and perceived the mobile phone as a better option for the conduct of E-Commerce. SME_{32} explains:

> The computer E-Commerce you are now referring to is not for us. None of my employees have used a computer before and in fact I don't have a computer – our computer is the phone. That is the type of E-Commerce we do. The phone is our office; regardless where you are the phone is the key to our clients. So we don't need the computer E-Commerce which, by the way we can't even afford.

SME owners also provided financial support for mobile technology as SME_{32} shows:

> Our mobile phones have really assisted us in this regard because we can communicate, pay and get paid using this system. We don't have to go the bank and queue there. I used to hate that. I totally support this use in my organisation, for example I try to give my people airtime bundles during peak hours or for a day.

The financial support for mobile use was however seen as not sufficient and the use of employee's personal mobile phones resented because there were no formalised policies relating to the usage of personal mobile phones for work purposes. An employee of SME_{33} explains:

> We are more interested in mobile phones because it is the quickest method to communicate here and most of our clients have phones but few have computers. So phones work for us but you see the problem is the phone itself becoming too

> much. My phone is no longer private anymore - it's just not right but what can I do, that's management's rule. They also gives us some credits to work with during the day but this is not enough because before you know it its finished when contacting clients on a different network - its expensive for me and management will not refund you know...they will just say you should know how to manage it better.

SMEs at this maturity level therefore associated E-Commerce with mobile technology– the ability to communicate and perform monetary transaction.

6.4.1.2 Maturity level: initial adopters

The total number of initial adopters was 20. They were categorised into two: those who used email communication and mobile; and those who had a static website and used email and mobile phone. Only 30 per cent relied on Email communication and a mobile phone, and the remaining 70 per cent used email, the website and mobile phone. Initial adopters perceived E-Commerce as the use of ICTs such as email, and a static website for business communication, advertising or marketing of their organisation. Email was seen as an imperative aspect of communication with business partners, specifically foreign business partners as SME_{13} explains:

> we use email a lot to talk to our suppliers in the US. It's a cheaper alternative to making a call there and it's quick. At least they know the importance of email, not like our people here…what works here is mobile communication. It's instant!

All SMEs at this E-Commerce maturity phase also used the mobile phone for both communication and the conduct of transactive aspects of business such as payment purposes, as SME_{17} explains:

> the website is purely used for advertisement purposes. There has been no transactive commerce since it's been up. Currently the website is static …we use it to communicate our products out there…but you see local clients always contact us using mobile phones or email…usually mobile because of the unreliability of the

> internet. We get our money transferred via the cell phone. Cell phone banking is working for us, unlike banks.

Mobile use was deemed necessary and important for communication and business transactions because according to SME_{12} the 'Internet is unreliable, so is the electricity...and so we have to come back to traditional means of payment - going to the bank or using mobile phones through M-PESA'.

6.4.1.3 Maturity level: institutionalised E-Commerce

The final category was SMEs that had institutionalised E-Commerce. These had reached the interactive stage and also resorted to email communication and mobile phones at the same time. The total number of these SMEs was seven. 57 per cent of these SMEs were in the tourism and entertainment industry, 29 per cent in the ICT industry and, finally14 per cent in manufacturing. These SMEs associated E-Commerce with an interactive website that is coupled with mobile technology use, bank transfer methods and email communication as SME_{26} explains:

> We have an interactive website that accepts queries, email and form entry from users but that is as far as we have gone. We did this because E-Commerce is important to consumers as it is associated with sophistication but also because we are aware of its benefits - especially those related to better communication with consumers and business partners. We still don't have the necessary technological resources for an integrated E-Commerce because, as it stands now, we can't even finish a transaction online – we always have to resort to email communication due to electricity cuts, poor ISP or something. There is also a major problem of payment which we either resort to bank transfers or mobile...with our foreign customers we resort to bank transfer but any local person simply uses mobile.

6.4.2 Organisational factors

In this study, seven themes were found to be acting as organisational factors affecting E-Commerce in Tanzania, as shown in Figure 15. Each theme is discussed below.

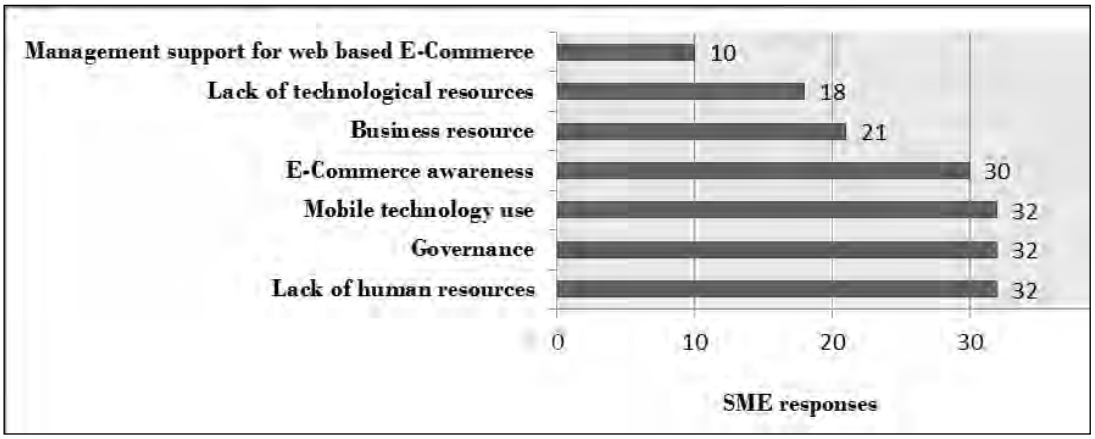


Figure 15: SMEs' perceptions on organisational factors affecting E-Commerce

6.4.2.1 Lack of human resources

Human resources refer to the 'availability (accessibility) of employees with adequate experience and exposure to ICT' (Molla & Licker, 2005). In this study, all SMEs indicated that not all of their employees had the adequate experience and exposure to ICT and other skills needed to adequately staff E-Commerce. SME owners were certain of the lack of basic ICT skills by all of their employees, especially non adopters and initial adopters who indicated that ICT skills were expensive to acquire as SME_{13} explains:

> We only have a secretary who has basic ICT knowledge. The others don't need to. The secretary needs it for communicating with our business partners and doing internal admin. We simply cannot afford to have many IT skilled workers – its expensive to maintain them and besides what computers would they use because we only have three, one for me, one for the secretary and the other for the manager.

The results confirm the evidence presented in the quantitative study which shows that the majority of SMEs' owners perceived their employees to lack the adequate experience and exposure to ICT. Qualitative results show that the reason for the lack of basic ICT skills was attributed to the lack of technological resources, especially computer availability as implicated by the quantitative study.

6.4.2.2 Lack of ICT expertise

Evidence in this study shows that SMEs at the initial stage of adoption and at institutionalisation stated that although all their employees generally did not have basic ICT skills there were some with basic computer literacy and technical networking skills. However, these employees – and the organisation as a whole – lacked software specific related skills necessary for E-Commerce, as SME_5 explains:

> we do have the expertise we need...we have technician with vast experience...I am not sure about the software side if we have…I don't know anyone here who deals with software development here, so I don't think we do have, but in the technical side such as networking yes! But we concentrate on the hardware and not software because we know we are confident there…it's difficult to get software skills and actually that's what we need to build a proper E-Commerce site.

Software skills were perceived to be scarce and an expensive commodity that was generally outsourced from companies rather than maintained within the organisation as SME_{13} illustrates:

> most of the things are outsourced...especially in IT. Our website is maintained by one IT guy from outside - why should I pay for an IT guy to sit around when I can outsource the service…remember these guys are expensive. So he comes once in a while for maintenance or to address technical faults. Contractual is cheaper than having them here permanently...because you will have to pay their salary, their pension, their transport fare allowances etc... which we as small as we are we cannot afford....and sometimes for them doing nothing.... yah this is how most of us [SMEs]survive.

Although the quantitative results show that SME owners were neutral regarding the availability of ICT expertise in their organisation, the results in this study do confirm the quantitative results which indicate that the majority of SME owners thought that their organisation lacked sufficient expertise to implement and maintain E-Commerce – due mostly to the presumed expense of acquiring an expert in ICT.

6.4.2.3 Mobile phone technology

All SMEs were observed to use mobile phones at all levels of adoption, both at initial and at institutionalisation phases. Mobile phones were strategically used to avoid fixed line telephone Internet enabled desktop challenges. The challenges that appeared consistent amongst all SMEs were (1) lack of ICT awareness and skills among consumers as well as business partners; (2) electricity shortages; (3) few trading partners who had access to fixed line telephones; (4) the financial investment required for ICTs; and (5) poor Internet connections. Mobile phones were also strategically used for the conduct of monetary transactions, as SMEs were able to use mobile banking services such as MPESA and ZPESA to complete basic banking transactions such as using the mobile phone to save money, do deposits, withdraw money, pay bills, deposit money into one's bank account and send remittances across the various regions in the country without the need to visit a bank branch. Mobile phones were thus treated as a safe asset and an affordable financial instrument to many who were excluded from formal financial services due to the stringent requirements of opening a traditional bank account. Strategically, SMEs were able to enhance the relationships and services of their customers through their mobile phones. For example, SMEs in the transportation and the ICT industry (who sold ICT products), were able to organise themselves by avoiding problems caused by infrastructural difficulties beyond their control such as traffic congestion or electricity cuts. The mobility aspect of mobile phones makes it possible for SMEs in the transportation industry to call their colleagues who were already working to inform them of the traffic situation. Based on that information they could make informed decision as to which alternative route to use so as to not delay their customers to their final destination, and also in delivering customer products. They could inform the customer of the decision made and allow the customer to also have input prior to commencing their journey. In so doing, they were able to retain and maintain a good relationship with customers. However, with fixed line telephony this would have been difficult to operate because most consumers do not have access to fixed line telephones, thereby making communications a daunting task.

SMEs mentioned how the mobile phone was used to bypass government employees who were corrupt. The SMEs were able to call their government partners when they encountered bureaucracy at the hands of other government officials who either purposefully or ignorantly misinterpreted any of the policies or rules. It was, however,

clear that this advantage was known only to this SME who had business contacts privately with government and had developed a personal relationship with them. This explains the low response rate regarding this theme. The mobility hand-held device enables people to acquire power by reporting incidents at any time and from any place which would have been difficult to possess via fixed land lines.

6.4.2.4 Governance

Governance refers to the strategic, tactical and operational model an organisation puts in place to govern its business activities and E-Commerce initiatives (Molla & Licker, 2005). All SMEs demonstrated a lack of a governance model in their use of E-Commerce activities. No specific patterns of authority for key IT activities were put in place. For example, there were no rules regarding the use of employee's personal mobile phones. As such, employees were asked to use their phones for work purposes without any benefits attached. Employees however, felt the need for the employer to treat their mobile phones as personal; or provide a governance model which indicates how employee's personal phone can be used to best support the organization and how they (an employee) can control this usage. Although personal phones were used for work purposes, there were no formalized documents or policies to this effect but it was done unconsciously by SME management. Employees indicated that there needs to be an indication of who has the final say with regard to employee's personal phone because

> 'even this is not clear. ..anyone who has a senior position than you or who is related to the mheshimia (boss) can tell you to call a client using your phone…you have to do it….they assume its part of your job' (SME_{15}).

It is clear that the lack of a governance model made it difficult to know who is responsible for decision making regarding certain resources such as the mobile. Such remarks are consistent across all SMEs, but are more apparent with non-adopters. These findings show that there is no form of governance other than mobile technology for E-Commerce and thus confirms the quantitative results which indicate that SMEs did not agree that there was an E-Commerce strategic, tactical and operational model in place to govern business activities and E-Commerce initiatives.

6.4.2.5 E-Commerce awareness

All SMEs indicated they are aware of web-based E-Commerce, but are sceptical of its relevance to their business. For example, SMEs that had not adopted E-Commerce were highly sceptical of it, despite knowing the benefits attached to it, as SME_1 indicates:

> 'it could be advantageous to adopt...but you see we know it's not compatible with our way of operations... and so I don't support it. Our form of E-Commerce is through the phone as it avoids all the financial and technology challenges I would have to face.

The perception that E-Commerce is not compatible with the local context is also agreed upon by SMEs that had adopted E-Commerce. They claimed that E-Commerce lacked the bargaining ability so necessary for doing business in Tanzania. This is affirmed by SME_{29}:

> to begin with, I try to provide the necessary support for E-Commerce but my vision of E-Commerce has not yet been communicated to the rest of the organisation. Why this is so is because I doubt whether E-Commerce will be compatible with us and especially how our local clients do business –they like bargaining in everything. How will they do that online, given that they can't even communicate in English?

This view of compatibility is seen in remarks by SMEs that had institutionalised E-Commerce. They said that it was impossible for them to go beyond interactiveness because of the nature of the challenges that they face. SME_{20} explains:

> we would like to fully integrate E-Commerce in our business but it doesn't seem to be compatible with our way of doing things here. The way we do things is dictated by what we have - the ICT infrastructure which is not reliable.

The findings thus ratify the quantitative study which indicates that the majority of respondents were aware of E-Commerce, although the level of awareness differed according to maturity level.

6.4.2.6 Lack of business resources

In this study, traces of business resources, as business relationships, are found to be exhibited by SMEs that had partnerships with foreign companies in the developed economies of Germany ($SME_{10,26}$), United States of America ($SME_{8,13}$), Dubai ($SME_{18,21}$)

and, for some, in India ($SME_{3,4,20,24}$). SMEs in the tourism and entertainment and ICT industry are the ones with high incidents of partnership programmes with foreign companies. These partnerships allow SMEs to engage with their partners in solving ICT problems, such as continuous management of servers which was thought impossible in Tanzania due to electricity cuts; providing training and advice due to the lack of local expertise capability; and services such as web design and development as SME_{26} explains comprehensively:

> when I am unable to do something I consult the forums or my business partners abroad because the skills is not within reach here…we rely mostly on the programming forums, usually suggested by our partners, where we pose our problems and those guys try to solve the problem or suggest a way to solve the problem... I simply post my problems and those guys respond quickly, its almost as if they are online 24 hours...we have become partners with them without meeting....they are even thinking of coming on holiday here at our accommodation expenses...it's only fair because they help us a lot with no cost. But also I can only get this help usually in the night when the traffic is low and likelihood of electricity cutting is minimal. It's tough to seek help in the afternoon.

SME_{13} indicated how they obtained financial capital and relaxed regulations for operations from their partnerships; and SME_8 was guaranteed 'genuine' quality products which meant that the receiving SMEs were acknowledged to be offering quality products rather than counterfeit ones. Some partnerships, however, specifically those partnered with large ICT organisations, required stringent regulations, such as the SMEs being affiliated with them by acquiring certification, as SME_8 explains:

> So you will find that we have many certificates outside the entrance and that's because we need to upgrade ourselves all the time, otherwise our business partners wouldn't be happy with us – it's part of the deal with us… and they wouldn't give us those special discounts...but upgrade is necessary especially with the rapid changing in technology.

These stringent rules are, however, a problem for some of the SMEs who had no financial means to attend the training. Business resources are also associated with risk- taking

behaviour. SMEs that had not adopted E-Commerce were consistent in exhibiting non-risk taking behaviour towards E-Commerce, as SME_{16} demonstrates:

> We are aware of E-Commerce, its advantages and all... but I am simply not interested in it...and I am not willing to take the chance to adopt it... if I am to adopt it I have to take my staff for training. I simply can't afford it...do you know how much it costs to study IT?

SMEs that lacked business relationships with organisations that could assist in solving technological and financial problems and those that are non-risk takers are likely not to adopt E-Commerce than those that had these benefits. Partnership programmes are of critical importance for the adoption, and specifically the institutionalisation, of E-Commerce, because at that phase specific skill sets and technological infrastructure are necessary. These local SMEs are unable to acquire on their own. The reliance on foreign partnerships and the lack of other business resources do conform to the quantitative study findings which show that the majority of SMEs do not believe they have the range of capabilities necessary for E-Commerce.

6.4.2.7 Lack of technological resources

A lack of technological resources was reported by 56 per cent of SMEs as a hindrance to E-Commerce. SME_{25} explains:

> having an interactive website would require us to upgrade our technology facilities. Where will we get the money to do that? That's why we decided not to go beyond the standard expectation of having a website. Besides, most of our clients prefer contact via the mobile...its less hassle.

Similar remarks were made by SMEs that had institutionalised as demonstrated by SME_{21}:

> a website beyond what we have is not feasible for us to operate as it requires so much investment in terms of skill development which we don't have and have to outsource, that's what we did for the interactive website we have; and also remember these consultants are expensive! We will also have to buy those techy things to support his development process.

The general perception from 83 per cent of SMEs that had reached interactive stage of E-Commerce was that the lack of a reliable, accessible Internet services was the main hindrance to institutionalisation. SMEs that did not report technological resource scarcity indicated that they were able to enjoy the same advantages as SMEs that would have institutionalised E-Commerce because they were able to transact using their mobile phones. They did not feel inadequate technologically. SMEs in the Tourism and Entertainment reported high occurrences of a lack of technological resources required to adopt and institutionalise E-Commerce because of the nature of the industry as SME23 indicates:

> we need to be on the Internet – all the time if possible. But we can't because of this bandwidth issue. This disrupts everything, especially for customers who want to order from abroad. It's a problem…most of our customers are from there and so we would like to be on the Internet but you see, we can't.

Technological resources are also reported as being a hindrance to E-Commerce adoption in the quantitative study. Therefore this study confirms the results from the quantitative study that SMEs do not perceive themselves as having sufficient technological resources to implement E-Commerce, specifically the ICT base and the extent of computerisation, the flexibility of existing systems and experience with network-based applications for E-Commerce implementation.

6.4.2.8 Minimal top management support for web-based E-Commerce

Top management support and commitment is a key organisational component that has often been considered crucial in E-Commerce adoption and deployment. This is because management is responsible for providing for the financial resources necessary for E-Commerce and responsible, also for cultivating an organisational climate conducive to adopting E-Commerce (Teo et al., 2009). The result shows that 31 per cent of SMEs received minimal support for web-based E-Commerce in their organisations – specifically for institutionalisation. All SMEs highlighted that management support was geared towards mobile technology use in the organisation as it offered both interactive and transactive capabilities which are not possible when using web-based E-Commerce. For

example, SME_{15} stated: 'yes, we do get support; we are given credits to use in our mobiles every morning before starting work'.

The financial support given for mobile technology was higher than support for web-based E-Commerce because of what mobile technology offered. Reasons underlying minimal support for web-based E-Commerce were usually associated with the fact that consumers were not ready for the technology (SME_1); the poor ICT infrastructure, as SME_{22} explains: 'but there is no full support from management for it…they don't believe in it given the technological infrastructure in this country...it's just not reliable'; and the perception that E-Commerce was incompatible with a business culture that required, for example, bargaining techniques to be employed (SME_{33}). Findings of this study confirm the quantitative study which indicates that SME owners presented a low management commitment in support of any endeavours to implement or adopt E-Commerce.

6.4.3 Environmental factors

Respondents from this study identified six environmental factors associated with E-Commerce adoption and institutionalisation. Figure 16 shows the themes arranged in ascending order based on the frequency analysis of interview counts: socio-cultural norms; lack of support from the industry; lack of consumer e-Readiness for E-Commerce; and the lack of institutional e-Readiness.

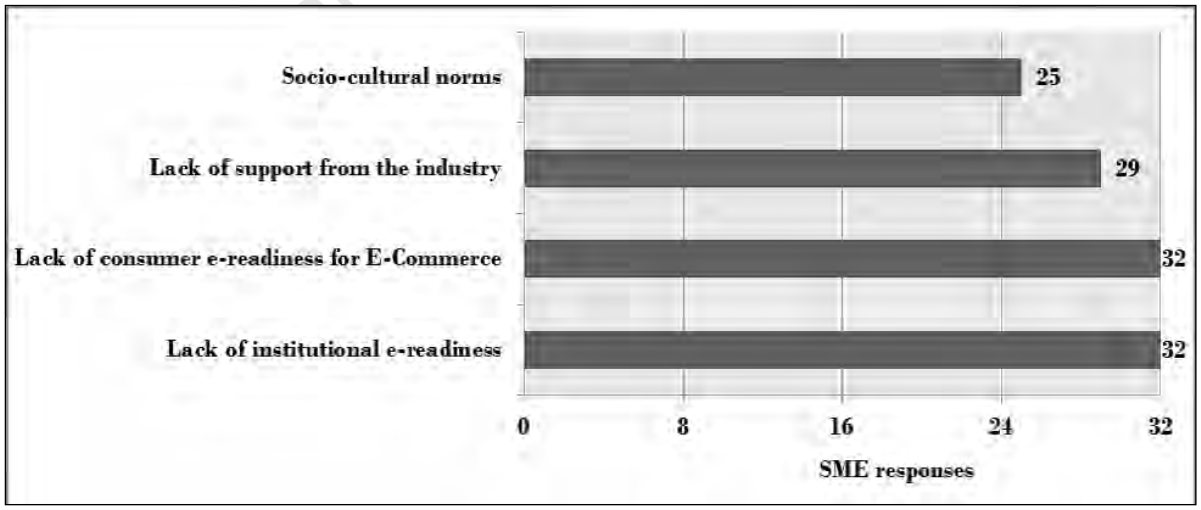


Figure 16: SMEs' perceptions on environmental factors affecting E-Commerce

6.4.3.1 Lack of institutional e-Readiness

The findings in this study show that SMEs perceived a lack of institutional e-Readiness – that is a lack in the preparedness of the nation state and its various institutions to promote, support, facilitate and regulate E-Commerce and its various requirements. Similar findings were reported in the quantitative study. Four subthemes which affect institutional e-Readiness in Tanzania, arranged in ascending order are depicted in Figure 17: lack of government commitment to ICT education and awareness; government lacks ICT skills to execute ICT specific tasks; lack of government commitment to ICT specific endeavours in SMEs; and irrelevant and incomprehensive ICT policy for E-Commerce.

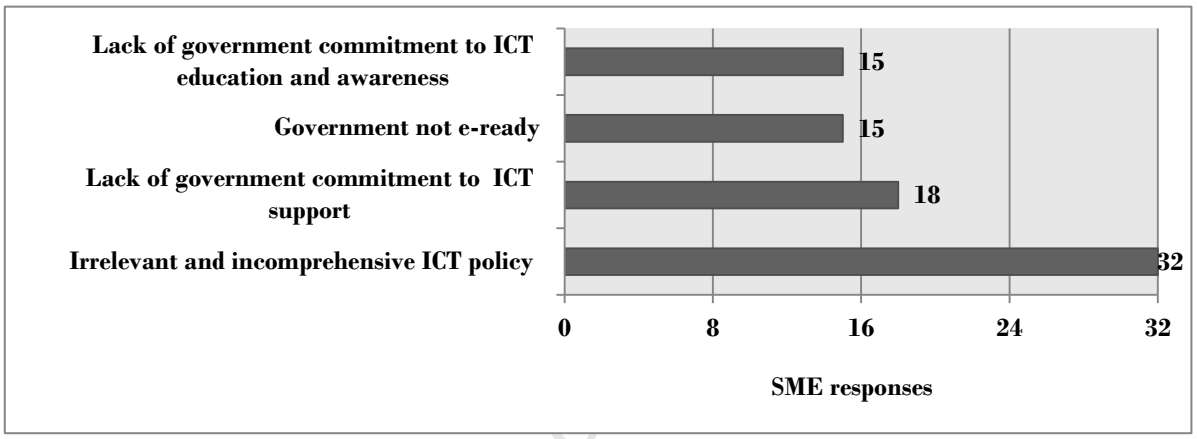


Figure 17: Frequency analysis of institutional e-Readiness

6.4.3.1.1 Government lacks commitment towards ICT education and awareness

The average SME's perception (47 per cent) was that there was a lack of institutional e-Readiness for E-Commerce because there was a lack of commitment from the government to ICT education and awareness. SME_{30} explains:

> Several reasons for this: one is that although ICT has been around, its education, use or practices in people's lives has been minimal – as they say, that is for the "wazungu" (Europeans). There is no awareness and the government isn't making any effort to do so…they like saying that they are doing something but what has been done in practice? Tell me, it's all on paper somewhere - isn't it? But what have they done? Now without people knowing about it, how can they use it?

> Have they donated a computer lab to some primary/secondary/tertiary institutions from their budget? Mind you they might say yes, we donated to school A; but remember, donating is not enough, have they ensured they have trained the teachers there, and given them all the necessary resources such as generators in case electricity goes off, sustainable internet model, up to date text books etc. required to ensure students understand the use of ICTs? This is important because from where I stand, most education institutions lack resources to conduct ICT education. If they don't, how do you expect them to grow up and be trading online.

As one way of showing commitment towards ICT education, some SMEs felt the government should subsidise ICT education costs which were perceived to be very expensive. The high costs of ICT-related courses were thought to be one of the reasons that deterred students from engaging in ICT. They preferred to pursue other courses as SME_3 explains:

> most people choose subjects that are easier to study in terms of fees such as management, commerce etc. But I know from my friends who are in university that computer subjects are very expensive. You see if we had some assistance from government on this, it would help a lot - but there is none.

The high costs are perceived to be one of the underlying reasons behind the high shortage of ICT skills and expertise (SME_{22}). A fair number of SMEs reported in the quantitative study confirmed these findings that the government failed to demonstrate a strong commitment to promote E-Commerce.

6.4.3.1.2 Government resistant to ICT-based transactions

The lack of commitment towards ICT education was attributed to the government itself not being ready for E-Commerce and ICTs in general. It was reported that the government was resistance to ICT-based transactions, as SME_{17} explains:

> Government needs to educate the people who are leading the ICT sections in this country. Yah! This is not there. They have to start themselves first. They have to

> be educated and change their perception. Let them see what is happening in the world because we in the business are moving at a different speed with government....who are too slow and still practising old mentality. For example, in the government organisation, there is no purchase that can be done online. The law doesn't allow any purchases to be done online from the government perspective. Any payment has to be through a cheque and not even cash. If any cash transaction takes place, it will be very small amount.

Government's failure to use ICTs can result in late payment of transactions done with them. Late payment is a hindrance to SMEs because their next goods for the next transaction are dependent on the previous payment.

6.4.3.1.3 Government's lack of commitment to Support SMEs in ICT endeavours

Government's resistance to ICT use can be partly attributed to their lack of ICT skills (SME_7), their 'stories, corruption and bureaucracy' (SME_{30}). The lack of skills in government can also be associated with its lack of support for SMEs' ICT endeavours. For example, SMEs (56 per cent) constantly commented on the lack of ICT specific training and financial support from government. SMEs acknowledge the presence of general entrepreneurial training, but indicated that it 'is not good enough – I need financial assistance, and learn computers to kick start myself in ICT properly' (SME_{25}). There is thus a general agreement that government's failure to provide ICT support in terms of training and financial support was a hindrance to E-Commerce.

6.4.3.1.4 Lack of relevant and comprehensive policies regarding E-Commerce

All SMEs perceived that E-Commerce is hampered by the irrelevant and incomprehensive policies in place which were also not accessible to most people. SMEs feel that the ICT policy was not comprehensive enough to capture security and privacy issues which were necessary to establish trust on the Internet. SME_{26} explains:

> you mention the ICT policy, I think we here are ready to go online but the country, the government is not in terms of their policies...for example, online

> payment security and privacy issues are not clear for me to make that big decision to take my company fully online based. Who do I trust there? For now this is one of the inhibiting factors for E-Commerce and any other online related payments.

These concerns are echoed by other SMEs but of most concern was the government's lack of commitment to ensure public awareness of ICT-related policies. All SMEs manifested an impression of not knowing about the ICT policy like for example SME_{20} who indicated:

> I mean I am not sure if we have protection measures for us online. I am not sure really. Where can I find that? Who can convince me? the government and maybe other big IT firms who have done it successfully...but i am not sure anyone has done it...to start off, the government doesn't support online and even ICT related business...so I don't think so. They will surely tell me check some law or policy but I don't trust it.

Other SMEs are aware of the policy but indicated that it did not address SME specific needs, specifically those related to ICT and E-Commerce as SME_{13} explains:

> They don't even listen to our problems, they think they know them but they don't....for example, what have they implemented in the ICT policy that helps us as SMEs? Tell me - go and ask them, nothing! That policy is a show to the donors – just to tell them that we do have one....that's why those policies are all in English…which one of them [policy] is in Swahili? Tell me? Who will understand them here in Tanzania?

The general perception is that policies were crafted for a political agenda but were not implemented for the needs of the community. The lack of appropriate policies, which could easily be accessed in terms of content (language) and delivery, is therefore seen as a hindrance to E-Commerce. These findings confirm the quantitative study which shows that the majority of SMEs are uncertain of the legality of the business environment for the conduct of business on the Internet and whether there are effective laws to combat cybercrime or effective laws to protect consumer privacy.

6.4.3.2 Lack of industrial support

The result shows that SMEs recognise that the absence of service level and cost structure of support-giving institutions such as telecommunications, financial, trust enablers and the IT industry, affect the E-Commerce initiatives of businesses in developing countries. This is a confirmation of the quantitative study which shows that the majority of SMEs strongly do not believe there is support from the industry with respect to E-Commerce. The factors, in ascending order, that contributed to the lack of supporting industries e-Readiness in Tanzania are depicted in Figure 18.

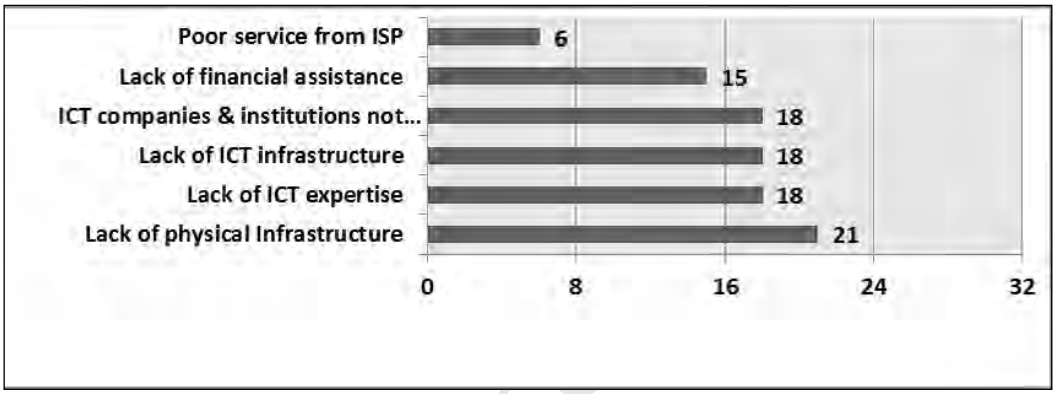


Figure 18: Frequency analysis of factors affecting supporting industries e-Readiness

6.4.3.2.1 Lack of physical infrastructure to support E-Commerce

The majority of SMEs (66 per cent) constantly complained that the physical infrastructure hampers their business operations and would be for E-Commerce due to the poor transportation system across the country and the traffic congestion in the economic capital city of Dar-es-Salaam. The consequences of continuous business delays resulting from traffic congestion, poor roads, as well as the 'on and off electricity cuts' (SME_{29}) are 'slow business operations, inefficiency and customer dissatisfaction' (SME_{15}). Lack of planning is also highly stressed in that buildings and roads were erected without effective planning and foresight and with poor materials. This meant that roads deteriorated quickly and poorly constructed buildings are simply demolished. Their demolition interrupts the already installed network cables and this hampered network accessibility and caused massive losses to businesses. SME_{24} explains:

> The infrastructure is another problem here. If you look at the infrastructure across the country, and even here, Dar, things are still in a mess! For example, there is no

> guarantee that the building block that is here today will be in the same position tomorrow and what consequences does this have on the network aspects. I mean definitely cables were running up that building.

6.4.3.2.2 Lack of ICT infrastructure for E-Commerce

A fair number of SMEs (56 per cent) indicated that E-Commerce adoption and institutionalisation is affected by the lack of conducive technology related settings for it as well as the services necessary to support it. There was constant complaint concerning the lack of bandwidth by SMEs that had adopted and institutionalised E-Commerce. For example, SME_8 felt that

> there is not even a room to think about it [E-Commerce]...to start off, do E-Commerce with which Internet? Ours? No, it's not possible as it's never stable that one.

SMEs in the tourism industry indicated that due to connectivity problems, customers were unable to finish their ordering forms as the Internet would either be off or take longer than usual. SMEs considered the lack of collaboration between the industry and the government on ICT issues as the main contributing factor to the poor ICT infrastructure in the country because according to SME_{17}:

> For them [government] to change they need to go for training and change of perception...they also need to listen to us in the private sector. They think because we are just SMEs, we don't know anything. That's why they develop these policies that don't help us...you see!

These results confirm quantitative results that the majority of SMEs (73 per cent) perceive that the telecommunication infrastructure was not sufficiently reliable and efficient to support E-Commerce and E-Business.

In terms of the services necessary to support E-Commerce, SMEs reported the absence of online payment systems such as credit, debit and charge card credit. Although debit cards are slowly penetrating the economy, credit cards were still seen as a new phenomenon and as a requirement for E-Commerce success, as SME_8 explains:

> also there is no credit card system to support E-Commerce. I can personally say that there is no credit card system here - so how can you go online? Whatever is here is still in the infancy stage. Online shopping is not happening still. Even for a big company like ours, we still face the same challenges of online transactions.

It was therefore established that the lack of online payment services was a hindrance to E-Commerce institutionalisation. These findings confirm the quantitative results that indicate that the majority of SMEs did not believe that the technology infrastructure of commercial and financial institutions is capable of supporting E-Commerce transactions; that there was no efficient and affordable support from the local IT industry to enable their interactions on the Internet; and that secure electronic transaction (SET) and/or secure electronic commerce environment (SCCE) services are easily available and affordable.

6.4.3.2.3 Lack of ICT expertise

SMEs regarded the lack of readily available ICT experts as one of the key detrimental factors for E-Commerce institutionalisation. Although initial adopters and those that had institutionalised indicated they had the necessary capabilities to develop a website, they noted that software specific skills were difficult to acquire and, even if acquired, difficult to retain. Most SMEs that had adopted and institutionalised E-Commerce indicated that they did not have software skills in their organisations but relied on external support when necessary. Expertise related to software development was considered difficult to acquire in comparison with technical skills such as network management.

6.4.3.2.4 ICT companies and institutions not supportive of Students

The lack of expertise was perceived to be associated with three factors: cost of acquiring the knowledge; ICT institutions curriculum not being context specific; and ICT institution's lack of resources to implement context specific ICT education that solves local problems. There was a general tendency to perceive ICT courses and training as expensive in comparison to other courses as SME_{14} explains: 'ICT training is expensive in

comparison to other courses for some obvious reasons such as use of Internet, technologies, etc.'

The high cost of training needed to acquire ICT expertise was associated with the ICT resources needed for training such as computers, connectivity (the Internet), software and licences, the time it takes to be competent, and the scarcity of the human resource required for doing the training. These high costs hindered SMEs adoption of E-Commerce, specifically the move from initial adoption to the institutionalisation phase which required specialised expertise. Due to the high costs of ICT training, SMEs were unable to financially support their employees to go for such training. This inability to have continuous learning in the organisation did impede E-Commerce institutionalisation.

The ICT curriculum was also under scrutiny be SMEs. For example, there was a series of remarks on how the ICT curriculum was a mismatch to industrial needs as SME_{14} continues to explain:

> despite it [ICT training] being expensive, most of the people that come out of the system are not helpful...especially for someone like us who are not in technology...I expect the student to help me but they get stuck themselves and now I am sitting with someone who cannot help me but I have to pay? It surprises me and makes me wonder what they study there at school.

SME_{28} indicated that the problem was that these institutions lacked the resources and even for those that had the resources, were resistance to make use of ICTs in learning. He explains:

> everything there are political. Lecturers have not changed...the university has not changed, everything is still manual...lectures do not use ICTs whilst teaching. And as such ICT students here tend not to be as confident in what they are doing.

Although the SMEs did recognise challenges faced by educational institutions; they pointed out that the education institutes do not have the adequate expertise, competency and human capacity to teach ICT subjects and the result was that the graduates were not prepared for the industry in terms of know-how. Business ethics were also strongly

emphasised as the core reason behind not trusting graduates and employees. It was established that students were not 'brushed and polished in such a way that when they come from university they know the principle business ethics' (SME_{18}). The general perception was that educational institutions fail to instill in students a culture of integrity and continuous learning that will encourage graduates to keep pace with technological changes. This was perceived as a challenge and a significant hindrance to the adoption of E-Commerce, because having reliable and affordable graduates who possessed a culture of continuous learning was a prerequisite for adoption in Tanzania because, according to SME_8:

> Human Resource in Tanzania is crazy, we don't have. It's difficult, the experience I have had with the graduates is that (1) they are too demanding; (2) they will not perform to the mark; (3) I don't find them eager to grow technically! They will be very content with the small things that they know. They don't want to take the challenges of growing up. This is just my views and a problem if the ICT industry has to grow depending on these kinds of people.

These challenges of a mismatch between the curriculum and the industry were attributed to the fact that there was no co-operation between the industry and ICT institutions of learning. This co-operation was considered important to address industry specific needs as SME_{18} explains:

> our educators here are not doing a good job because they are not partnering with us in the industry – very few do that and as for those who do it, not in the ICT sector. And we need this partnering to address the problems which we are failing to handle – and this is not there. So I can confidently say, for SMEs, the educators are doing nothing....unfortunately the academics themselves are not prepared to change with the system.

The general perception was that the lack of cooperation and, therefore, of sharing of knowledge was said to lead to incompetent graduates who had skills that were not relevant to the specific needs of the SMEs, and was therefore a hindrance to SMEs intention to adopt and or institutionalise E-Commerce. SMEs needed support structures that could enable them to develop their E-Commerce projects, and through which, they can perceive the potential benefits of adopting E-Commerce.

6.4.3.2.5 Lack of financial assistance from the industry

Access to finance was mentioned as the most serious barrier to business start-up or growth especially for E-Commerce, as ICT initial investment was perceived relatively higher than other forms of business venture. SMEs perceived banks to be reluctant to assist financially as SME_{25} explains:

> having an interactive website would require us to upgrade our technology facilities, where will we get the money to do that? The bank won't help us - I know so because I have tried other projects with them and they denied me - so where?

Due to the lack of support, SMEs perceived banking institutions as being resistant to E-Commerce because, according to SME_6, banks 'are not keen - they also do not issue credit card easily and even if they do, we can't afford them'. In order to obtain financial assistance, SMEs have to use their assets as loan collateral. This is a stringent setback for SME growth as they have no tangible assets to offer as collateral and security for bank loans and operate in illegal sites or premises because there are not adequate appropriately serviced areas where they can locate and operate from. SMEs also report on the cumbersome banking procedures which require identification documentations, such as passports or birth certificates, which most Tanzania do not possess and also show their past business documentations. Most SMEs did not use formal financial methods such as banks but used mobile financial services for saving. There was also a general perception that large ICT organisations, such as Microsoft, were not there to support SMEs. Although these organisations organised seminars and conferences, these were perceived as marketing platforms and not for SMEs support for E-Commerce adoption. With no support, SMEs found it difficult to venture into E-Commerce.

6.4.3.2.6 Poor service delivery from ISP

A low number of SMEs (19per cent) experienced poor quality of service from Internet service providers. SME_{13} provides a typical scenario which four other SMEs experienced:

> sometimes there is no internet completely and you have to stay days before the providers solve the problem. Sometimes the provider can't solve the problem immediately because maybe a tree fell on his cables etc. We have

> many providers but the main one is TTCL.Their connection is not as we would like it to be. At one time, it's fast, other times it's slow - confusing really. You can never be sure of it!

SMEs also criticised the high costs associated with Internet despite the poor quality of service from Internet service provider. Despite the arrival of SEACOM, SMEs still perceive high internet costs because SEACOM has become monopolised as $SME_{10\text{-}ICT}$ explains:

> You see the problem before was bandwidth and you couldn't do anything serious online. But now, SEACOM has come in the internet speed has improved. We will start to see E-Commerce activities. But even with SEACOM, they are monopolising the industry and i am not sure if the costs will surely come down-not sure (SME_{10}).

Similar sentiments are expressed by SME_{25}:

> You see the cable has been in place since last year, yes, the prices have gone down but the only cable we have that is operational around is SEACOM which is operating on a monopoly basis at the moment. So definitely SEACOM's prices are high.

6.4.3.3 Socio-cultural norms

Socio-cultural factors that SMEs perceived as hindrances to E-Commerce were in ascending order, as shown in Figure 19: dependency syndrome; language barrier; lack of general trust; and a culture of bargaining.

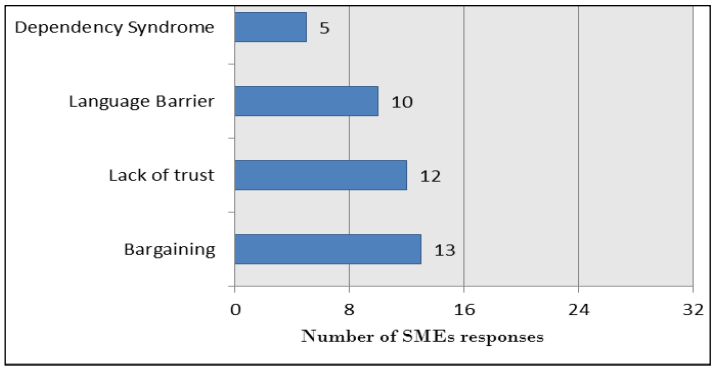


Figure 19: SMEs' perceptions on socio-cultural norms that affect E-Commerce

6.4.3.3.1 Bargaining

A fair number of SMEs (41 per cent) indicated that web-based E-Commerce was not compatible with the local target market which relied highly on the face-to-face bargaining and cash-based system which was seen as important because according to SME_9 'you must remember that our people have a bargaining system on everything, even in buying secondhand products...it's just normal...I don't see this being feasible on the internet'. These perceptions were stumbling blocks for the advancement of an SME from an initial web-based E-Commerce adoption stage to institutionalisation. SME_{30} explains:

> how do you expect people to grow up without a proper ICT education and be trading online - a place where they can't see anyone? You see, seeing the person you are trading with is part of the buy/sell process here. It includes the bargaining element in which the language used, the body posture, the province or tribe the client is coming from etc. count a lot. Traditions play a role as well because now you would have to break this process of bargaining to embrace online trading. How are you going to do that when to start off, the people lack the education of ICTs?

6.4.3.3.2 Lack of trust

Some SMEs (38 per cent) felt that the lack of general consumer and institutional trust as one of the challenges in the adoption of E-Commerce. Trust was hampered by the increased corruption and bureaucracy that had become part of the social system. SME_{11} explains:

> to acquire a business contract or any assistance from the government, Aim always subjected to some form of gift giving that I have to give if I want to be attended to. Otherwise they will allow me to just sit there the whole day while they watch me and not help.

This phenomenon discouraged most SMEs from venturing into ICT-related businesses with government. Consumers and the public at large were also criticised for supporting corrupt behaviour. For example, SME_{18} indicated that

> people are just not serious. You see for every business process we have, there are protocols to follow which consumers are aware of. However, most consumers fail to comply with the protocols and then expect to be assisted when a problem arises. And do you know how they want us to assist them? They come ready with a bribe for us before we can even say anything they silence us by flashing the khaki envelope out.

Corruption and bureaucracy were regarded as a norm and, though a frustrating practice, it was not questioned because *you* 'either play along with them to get the tender/assistance or get out of the queue -this happens in almost every area' (SME_{11}). This behavioural practice is seen to impede business practice conducted by all traders both in government and in the private sector. Students were also identified as not being 'brushed and polished in such a way that when they come from university they know the principle business ethics' (SME_{18}). Business ethics were strongly emphasised as the core reason behind not trusting graduates and employees. It was established that educational institutions fail to instill into students a culture of integrity and\ continuous learning that will make graduates keep pace with technological changes. Although all SME indicated they do take graduates on board, they did acknowledge that trusting ICT graduate competency and their business ethics was a challenge, and this lack of confidence in graduates had negative implication for E-Commerce adoption, specifically on its institutionalisation which relied heavily on the presence of reliable and skilled ICT personnel. Reliability of ICT workers was important for the adoption and institutionalisation of E-Commerce because ICT workers were difficult to obtain, retain, and were very expensive. ICT workers with no business ethics had no loyalty to an SME and they could easily either move to another enterprise or use the same SME's resources to start their own business. Unfortunately, this made it difficult for SMEs as they are left unsure of their staff members' loyalty and are reluctant to institutionalise E-Commerce lest they do not have a reliable ICT expertise to continue the project.

Trust is further hampered by the consumer's preference for refurbished and second-hand goods compared with new innovative products and ways of doing things. There is a

culture of buying second-hand goods, usually at a very low price, and this culture hampers SMEs intentions to go online as SME_{20} explains:

> we would want to have the local market but they are not ready for internet business because people are so used to second hand foreign products like mitumba that buying a new product, like an African print shirt online would be strange....yes.

'Mitumba' refers to used clothes in Tanzania that are imported from Europe by charitable organisations and churches for poor/needy people. This culture, coupled with the increase in imported poorly made or illegal products posed as a challenge for SMEs (SME_7). This is one that was seen to be beyond their (the SMEs') grasp because 'government itself buys cheap low quality products and now the public itself has developed that tendency' (SME_{24}). Consumers' inclination to purchase secondhand goods is also seen to be hampering the SMEs' intention to adopt E-Commerce because secondhand goods are relatively cheaper and of poor quality in comparison with products that one would want to trade online and to acquire for or from the international market. Products that were to be traded online had to be of good quality. SMEs' view is that the local customer's high propensity to buy second- hand goods did not yield sufficient returns for them to institutionalise E-Commerce; and international customers are not sufficient to be a motivational factor to institutionalise E-Commerce. It should be noted, however, that not all SMEs see quality as a problem. Only 16 per cent indicated so in the interviews.

Trust is also hampered by the lack of an identification system for individuals. Tanzania has no identification system such as a national identity document or traceable addresses for establishing the identity of its citizens. SMEs perceived this as a challenge as it caused mistrust. A clear identification system would provide mutual confidence between business partners; reduce the scope of dishonesty, and improve business through easier sharing of information and services. The lack of an identification system is a contributing factor to the hindrance of E-Commerce adoption and institutionalisation because

> [i]t is difficult to do business here with everyone....and we would like everyone to be our customer - to increase our target market as much as possible, but we can't because most don't have means of identifying them. This is a problem. Customers who have means of identification, we can easily deal with them and give them a

better deal - they can bargain a better deal when they come. But without identification - we can't unless we know you personally and even then I have seen it minimally (SME_{28}).

6.4.3.3.3 Language barrier

It was evident that language was a problem during the interview process as most SMEs were unable to fluently express themselves in English. The results show that 31 per cent of SMEs perceived language to be a barrier to E-Commerce in Tanzania and that the market was not ready for E-Commerce. Most of these SMEs are in the insurance and ICT industry. Whilst some SMEs explained that consumers were not ready because they were not conversant with English – the language used on the Internet, others SMEs explained that there were no skilled personnel who could communicate in English. A typical scenario is illustrated by SME_{19}:

> When we contact our clients we usually use email because sometimes they speak to fast on the phone and you know English is a problem. So at least when they write, if I don't understand I can ask someone here to translate. So yah, language is an issue sometimes.

Similar sentiments were echoed by several SMEs. For example $SME_{1,}$ agrees stating that

> I personally am not ready because my business will have to change and that will take time. For example, I will have to change and learn mzungu's (European) language to communicate with computer. I will have to attract more customers who can use a computer and understand mzungu's language.

Language is thus a barrier in the adoption of E-Commerce by both SMEs and consumers.

6.4.3.3.4 Dependency syndrome

A low percentage of SMEs (16 per cent) indicated that Tanzania's dependency syndrome is part of the reason why E-Commerce adoption and institutionalisation is not successful. The perception was that Tanzanians are too dependent on each other. So much so that to transfer this culture to the Internet will be difficult as SME_{30} explains:

> our people are so into sharing of everything. When you buy, you share. What can you buy online and at what price and still be able to share? You must be rich!

> People will still expect that whatever product will be bought online would have to be shared...that's what I mean that we and our consumers are not ready for this.

The dependency syndrome was seen to have become part of the culture, and has caused

> the Tanzania market to be slower than ours [Kenya]...I guess part of it is because of the "Undugu" syndrome which makes people to become lazy and have a dependency syndrome....dependency syndrome is such that when one member of the family becomes successful, the others all start to relax and depend on him....this is what I call a dependency syndrome that is so prevalent here. You see, it all boils down to Tanzania once being a socialist society which in my opinion built this dependency syndrome. One cannot proceed in life unless my entire people are also moving. In order to propagate the dependency syndrome, there are common slogans if you will notice such as "Boss", "Ndugu yangu", "Mheshimiwa", etc., which basically I feel translates to "I am below you so please, take care of me" - the names come with some attachment (SME_{10}).

The dependency syndrome has also infiltrated into the government to an extent that ' it fails to train their own, but rather relies on international expertise to solve ICT problems at the expense of the few local specialists' (SME_{12}). Dependency in government is also attributed to the fact that

> most government projects and activities are donor funded and most times the fund either is late or is deviated for other projects…without donors, there is almost no government here…and this is the problem! How can you be so dependent and not expect your people not to be the same? (SME_8).

Donor-funded projects from government tend to slow down payments for SMEs and this slowed down E-Commerce business transactions because the government not only failed to pay SMEs on time for their services rendered, but it also meant government was unable to support SMEs that required initial support to invest in E-Commerce ventures.

6.4.3.4 Market force e-Readiness for E-Commerce

Market force e-Readiness refers to the assessment that business partners, such as customers and suppliers, allow for electronic conduct of business. The factor that SMEs considered to most affect E-Commerce in this study was consumers' e-Readiness status. All SMEs thought that their customers were not aware of E-Commerce, while the majority thought them not ready for E-Commerce at all, as shown in Figure 20. These findings are similar to those from the quantitative study which shows that majority (64 per cent) of SMEs do not believe that their customers were ready to do business on the Internet.

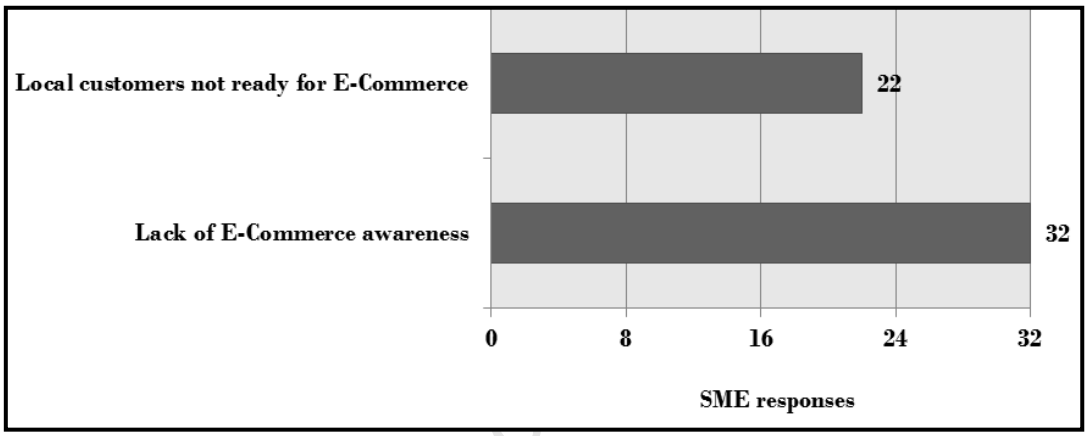


Figure 20: Factors associated with consumer e-Readiness that affects E-Commerce

6.4.3.4.1 Local consumers not ready for E-Commerce

One of the determinants which act as drivers for E-Commerce is consumer demand to buy online, i.e. consumer purchasing power is a key determinant of E-Commerce diffusion rates across countries. In this study, consumer purchasing power was perceived to very low for E-Commerce activities by the majority (69 per cent) of the SMEs. The reasons suggested for this lack of readiness include the ready availability of computer and Internet accessibility, the lack of know-how if one is able to access the resources, and the costs associated with accessing these resources, such as the Internet. SME_2 explains:

> the locals do not see the need to go to a website just to tour the country and in fact they don't use our services at all. Most of them don't know how or even where to go and access except internet cafés - but how many can afford going to internet café- tell me?

The cost associated with accessing the resources was perceived as high due to the consumer's low income levels as SME_3 states: 'most of us are very poor. My salary does not even allow having luxuries such as going online, and I have a job - what about the majority who don't even have a job?' These SMEs were sceptical as to whether E-Commerce would be beneficial for Tanzanians operating SMEs that target local markets because of the prior-mentioned problems and because

> our market is totally not ready to use it, partially it's because of Uswahili. Too much waswahili you know...lazy and not meeting deadlines or just time – they tell you they will deliver the products at 10h00 and they end up showing two hours later…having this behavior online would give you are bad reputation but in our system it works (SME_9).

6.4.3.4.2 Lack of E-Commerce awareness

Apart from the consumer purchasing power being a key determinant of E-Commerce diffusion rates across countries; awareness and perception of E-Commerce was also found to be a factor in the adoption and institutionalisation of E-Commerce in Tanzania. All SMEs perceived consumers lacking awareness of E-Commerce, and this lack of awareness negatively affected SMEs' intentions to adopt E-Commerce. For example, SME_7 indicated that

> when I am on the Internet, I see very few people from east Africa and Tanzania specifically online. I see people from R.S.A, but not in Tanzania. They are not aware you can put you products online and advertise. They are not aware of how to utilise the internet for their own advantage.

These perceptions of people lacking awareness are uniform across all the interviews, as demonstrated by SME_6:

> the kind of E-Commerce of paying and buying online, that you are saying, I haven't seen any such awareness of people here being conscious of the importance of doing business online like that. Most people are not aware and even if they are, most would think it's impossible for them – it's for mzungu (European).

Such perceptions impacted negatively on SMEs' intentions to adopt and institutionalise E-Commerce.

6.5 Discussion

The findings of the qualitative study are generalised from the empirical materials of the 32 samples of SMEs that responded to the research study. The findings indicate that SME respondents are at three different stages of web-based E-Commerce. There are those at the no adoption stage; those at the initial stage, who have some form of technology such as a static website; and those that had institutionalised E-Commerce but had only reached the interactive stage. All SMEs, regardless of the maturity of their web-based E-Commerce involvement, are aware of the benefits brought by web-based E-Commerce. They, however, found the challenges overwhelming, particularly those that an organisation will have to face in order to adopt and implement the technology. These challenges are strongly associated with organisational and environmental factors that impact web-based E-Commerce in Tanzania. These challenges explain the lack of correlation between awareness of E-Commerce, the benefits, image and moderate management support; and E-Commerce maturity level in the quantitative study. Organisational factors that are perceived by the SME respondents of this study to be conducive for E-Commerce, include the availability of business resources, specifically business relationships with ICT foreign companies; the use of mobile technology for interaction and transactive purposes with consumers and suppliers; and the strategic use of mobile phones to avoid ICT-related challenges such as avoiding fixed line telephone Internet-enabled desktop challenges. A summary of these organisational factors are displayed in Figure 21, and are categorised according to those that present themselves as opportunities and those that act as challenges to the adoption of E-Commerce. All SMEs, depending on their E-Commerce maturity stage, associated E-Commerce with the use of mobile technology.

SME respondents that had not adopted web-based E-Commerce still consider themselves as having adopted the technology as they are still able to do the same business processes for example, business communication, marketing and payment as SMEs that had reached institutionalisation.

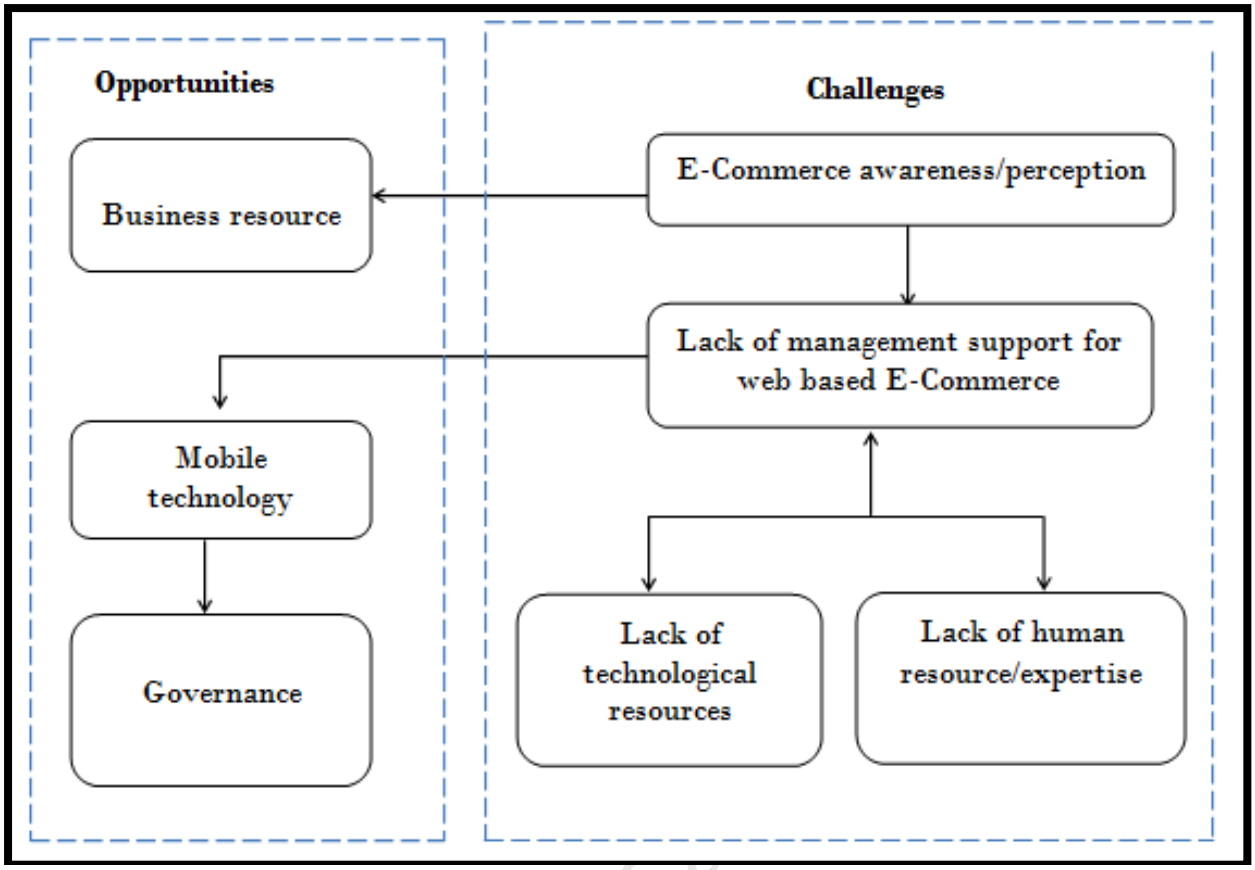


Figure 21: Organisational factors

SMEs also perceived it as a use of static website for information purposes and order entry. These SMEs are able to take advantage of the advertising model capabilities of a website in which benefits of providing content and services mixed with advertising messages (Rappa, 2003). Web-based E-Commerce, therefore, does not necessary translate to the buying and selling of products online using a website, but it is the use of mobile technology and/or web site in which parties interact electronically to perform business functionalities such as communication, marketing and payment. Thus, although web-based E-Commerce is seen as an advantageous technology, it is at the same time perceived to be inconsistent with modus operandi of local of businesses. These findings mirror those of Kshetri (2010) who indicates that technology compatibility calls for an assessment of the technology's relativeness to a user's values and experiences. Tanzanian SME owners do not find web-based E-Commerce to be relative and useful to their local context but do, however, find mobile technology compatible with their needs. SMEs largely associate E-Commerce with mobile technology use and consider their commitment to mobile technology as key to the success of their perception of E-Commerce.

Management commitment towards technology adoption is seen as one of the important factors for consideration for the successful adoption and implementation of E-Commerce in SMEs (Wang & Lin, 2009). Mobile technology is seen as a strategy of overcoming the challenges they experience with potentially adopting web based E-Commerce. The fact that 67 per cent of SMEs lack a policy to encourage grass roots E-Commerce initiatives or a process of governing E-Commerce, is an indication that most SMEs lack strategies for the adoption of web-based E-Commerce but they did have a strategy to deal with challenges of web-based E-Commerce. This is not surprising, given that IT governance in SMEs is still immature and there is a lack of SME-centred theories that can lead to general inferences about how SMEs should conduct IT governance (Devos et al., 2009). As a strategy, SMEs created business resources in the form of established business relationships with ICT foreign companies. Through these relationships, SMEs, specifically those in the tourism and entertainment and ICT industry, enjoyed benefits such as having a business partner solving ICT problems such as continuous management of servers (which was impossible in Tanzania due to electricity cuts); providing training and advice due to the lack of local expertise capability; and services such as web design and development. In the quantitative study, SME perception of business resource was low. A possible reason for this is because the research instrument did not regard established business relationships with foreign companies as a resource. This is a factor that was brought out during the interviews. Thus although SME respondents do not possess business resources such as open and trusting relationships, open communication, a culture of enterprise-wide information sharing, a policy that encourages grass roots E-Commerce initiatives, etc., as discussed in the quantitative study, they did value business relationships with foreign companies.

Organisational factors that are perceived to be hindrances to E-Commerce include: SME owner's awareness of E-Commerce, which did not necessarily translate to adoption; a perception that E-Commerce is the use of mobile technology and a static website, which translated to management providing support for mobile technology and minimal support for web based E-Commerce; the lack of technological and human resources necessary to implement E-Commerce. All SMEs in this study are found to be aware of E-Commerce though not necessarily having adopted the technology as have SMEs in the Insurance industry. Consistent to both the quantitative results and this study was the fact that all

SMEs indicated that they lacked the necessary human resource, expertise and technological resources to adopt and implement web-based E-Commerce. They perceived the skills needed to implement and use E-Commerce as too complex for their organisation. Technology complexity has been regarded as one of the hindrances to adoption, specifically to SMEs' willingness to adopt and institutionalise E-Commerce (AlNoor & Arif, 2011; Alam et al., 2008; Chan & Parker, 2004). To institutionalise E-Commerce, SMEs indicated that they would have to undergo training, which was regarded as expensive. This is a hindrance to web-based E-Commerce because organisations that have the necessary ICT expertise tend to have the propensity to adopt E-Commerce than those that do not (Teo at al., 2004; Nnafie, 2002). SMEs in this study further perceive the necessary technological resources required to invest in web-based E-Commerce as costly. Cost has been regarded as a detrimental factor in the adoption of E-Commerce, specifically for SMEs as it includes factors such as reliable, accessible, and high-speed telecommunication infrastructure, networks, and Internet services or the availability of alternative technologies, hardware, and software (Ho et al., 2007; Othman et al., 2010; Lin et al., 2010). Due to the costs associated with E-Commerce adoption, the Tanzanian SME's owner's commitment to web-based E-Commerce is minimal and this is seen in the lack of financial support given to web-based E-Commerce in comparison with mobile technology. Web-based E-Commerce is perceived as incompatible with how business transactions are conducted, specifically because of the bargaining culture and the use of mobile technology. Initial adopters and those that had reached institutionalisation showed commitment to web-based E-Commerce by having a static website which they indicated is compatible with their technological resources and expertise. However, for integrated institutionalisation purposes, SMEs were hindered by environmental factors which they thought could be overcome only by the use of mobile technology.

Environmental factors that are thought to be detrimental to web based E-Commerce are shown in Figure 22. One of these factors is the lack of consumer and business partner's readiness for E-Commerce which was found to be consistent with the quantitative study where SMEs exhibited low perception as to the e-Readiness of the both local customers and business partners to do business on the Internet. SMEs in the tourism and entertainment industry are more vocal about the lack of e-Readiness of local consumers and business partners as compared with foreign consumers and business partners, that

consumer purchasing power is low and the necessary E-Commerce awareness and resources such as ready availability of computer and Internet accessibility to partake in the use of E-Commerce is a stumbling block. These perceptions of lack of e-Readiness are a hindrance towards an intention to adopt E-Commerce. These findings are consistent with literature which confirms that SMEs in developing economies are usually hindered by among other things, few online customers and internet development problems (Uzoka & Seleka, 2006; Hawk, 2004). Having few online customers is a detrimental factor because one of the determinants which act as drivers for E-Commerce is consumer demand to buy online (AlGhamdi et al., 2011). There is, however, an awareness of E-Commerce amongst all SMEs, but this does not translate into adoption or institutionalisation because having a static website was associated with high prestige and not necessary to reap the benefits of E-Commerce. From this perspective, a website is a possible avenue for obtaining competitive advantage simply from the image it presents (Mohamed et al., 2009). There is a general understanding that there is a lack of institutional e-Readiness for E-Commerce. This was partly because ICT policies are not comprehensive enough for E-Commerce conduct, specifically with regard to security and privacy issues which are necessary to establish trust on the Internet.

Government policies that have to ensure institutional trust have been reported as an important determinant of IT adoption, especially policies relating to the enhancement of government E-Commerce use, national E-Commerce strategy, and provision of E-Commerce training (Zhu & Thatcher, 2010). Although E-Commerce training is one of the important determinants of IT adoption, SME respondents to this study feel this issue received minimal attention from the government and thus resulted in the lack of ICT expertise. The lack of ICT expertise is further hampered by a lack of industrial support for E-Commerce and ICT training. The lack of both consumer and government e-Readiness is attributed to the lack of expertise. ICT expertise is regarded as difficult to achieve due to the high ICT training costs associated with the ICT resources, such as physical (computers), software programs, and skills required for the ICT training; and the mismatch of the ICT curriculum and the industry needs.

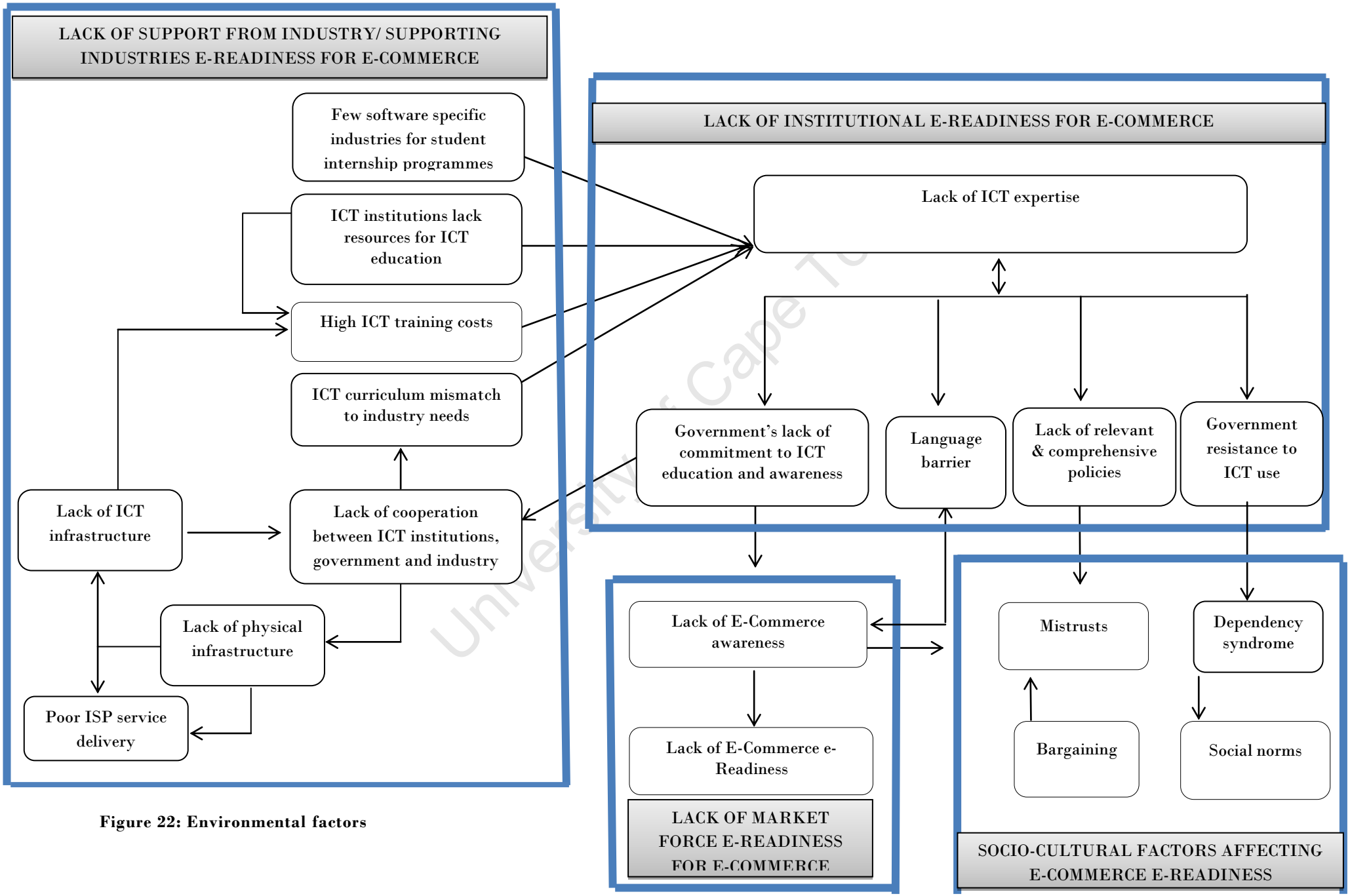


Figure 22: Environmental factors

This problem is as a result of (i) the ICT curriculum not being comprehensive enough for E-Commerce purposes; (ii) the lack of resources to conduct ICT education that is context specific; (iii) and the lack of cooperation between ICT institutions and the industry which could result in student internship programmes that could enhance student learning. Although these factors are not highlighted in the literature, they formed part of the challenges for SME respondents in this study. A majority of SMEs (91 per cent) though the industry not able to provide the necessary support, such as expertise, infrastructure (physical and ICT/telecommunication), services, and finance, for E-Commerce adoption and institutionalisation. These findings are consistent with Zhai (2011) who indicates that the IT industry in most developing countries is not sufficiently developed and is characterised a lack of a robust fixed telecommunication sector which is unreliable and inefficient to support the conduct of E-Commerce, as well as low credit card penetration (Uzoka & Seleka, 2006; Hawk, 2004). Zhai (2011) indicates that most commercial and financial institutions in developing countries are not mature enough to handle secure and reliable electronic transactions. These factors play an important role when organisations make the decision on whether to continue to use E-Commerce. SME respondents indicated that the lack of financial instruments such as credit/debit cards, and financial support is also a hindrance to E-Commerce. These findings are also replicated in Worku (2010), Riyadh et al. (2009) and Kapurubandara and Lawson (2009).

Another challenge experienced by SMEs is the constant complaint that the physical infrastructure is a hindrance to their business operations and would be for E-Commerce due to the poor transportation system across the country and the traffic congestion in the economic capital city of Dar-es-Salaam. SMEs therefore experience poor service delivery from ISP due to the lack of proper physical and ICT infrastructure. These perceptions are in agreement with Zhai (2011) and Travica (2002) that most transportation facilities in most developing countries are too poorly developed to deliver timeously for E-Commerce. Transportation infrastructure needs to be developed accordingly (Abdulghader et al., 2011) despite the fact that most researchers do not believe that commercial infrastructure such as transportation services significantly affect E-Business value (Okoli et al., 2010). In addition, the lack of an identification system such as postal address and identity documentation lead to mistrust and inefficiency in business transactions. All SMEs in the tourism and entertainment industry and 71 per cent of SMEs in the ICT industry

confirmed this problem. Travica (2002) reports on similar findings, specifically on the lack of postal numbers and street names.

The socio-cultural nature of consumer and business partners was also regarded as an environmental factor that was a hindrance to web-based E-Commerce because the nature of Tanzanian business follows values and beliefs such as bargaining that are difficult to practice online. Bargaining was perceived as a socio-norm that facilitated the process of building trust between the customer and the seller. These cultural practices are important factors that could act as a stumbling block for the progression of E-Commerce in developing countries because many aspects of technology are not culturally neutral (Sagi et al., 2004). Engraved in culture is the mode of communication – the language used to communicate. SME respondents perceive language as a barrier to the use of E-Commerce. These findings are similar to those of Mansell (2004) and Gattiker et al. (2000) who state that differences in language as one of the barriers to people using E-Commerce. These differences are more significant to SME respondents of this study because, according to Kenny (2003,105), 'there is a significant language skills gap, with perhaps half of the populations of the least developed countries not able to speak an official language of their own country – let alone English, the predominant language of the Internet'. Finally, social factors include the willingness of organisations to share information and extend their business chains (Zhu & Thatcher, 2010). The findings in this study show that SMEs are able to share their information with business partners whom they used for strategic purposes. The lack of sharing such information is perceived as a hindrance to E-Commerce, but SMEs that had institutionalised E-Commerce have exhibited a tendency to share information. These results mirror those of Gupta et al. (2010) and Lowry et al. (2009) that state that collectivist societies are more willing to disclose potentially sensitive personal information, whilst individualist societies intend not to and engage in higher passive privacy protection actions because they are less willing to depend on others, seeking power, freedom and individual rights (Lowry et al., 2009). Tanzania as a collectivistic society exhibits these trends.

6.6 Conclusion

6.6.1 Summary

The purpose of this chapter is to investigate organisational and environmental factors that affect E-Commerce adoption by SMEs in Tanzania so as to have an understanding of how E-Commerce becomes socially constructed in SMEs in LDCs. The study used open-ended interviews so as to engage the participant in conversations about E-Commerce in Tanzania. The findings show that E-Commerce in Tanzania is influenced by both organisational and environmental factors. Organisational factors of business resources and mobile technology use are perceived to be conducive for E-Commerce whilst those perceived to be hindrance to E-Commerce are SME owners' perception that E-Commerce is the use of mobile technology and a static website, which translated into management providing support for mobile technology and minimal support for web-based E-Commerce; the lack of technological and human resources necessary to implement E-Commerce. SMEs in this study are able to use mobile technology as a strategy for governance – as it provides means of governing most business activities. Further, a business resource shown to be important for E-Commerce adoption and institutionalisation is the ability to possess business partners in the developed economies. Most SMEs that possessed this resource saw it as an opportunity because such business partners were thought to have the capabilities of alleviating web-based challenges like ensuring that there is continuous management of servers which was deemed impossible in Tanzania due to electricity cuts; poor training and advice due to the lack of local expertise capability and the services such as web design and development. Figure 23 illustrates this phenomenon.

Environmental factors that affect SMEs in adopting and institutionalising E-Commerce include: market force e-Readiness, institutional e-Readiness for E-Commerce, industrial support for E-Commerce, and the socio-cultural nature of consumers and business partners. Although SME owners perceive these as challenges, they did indicate the market was ready for mobile technology and that there is a higher industrial support for mobile technology use than for web-based E-Commerce. These factors are regarded as opportunities for all SMEs, regardless of the maturity level of E-Commerce adoption.

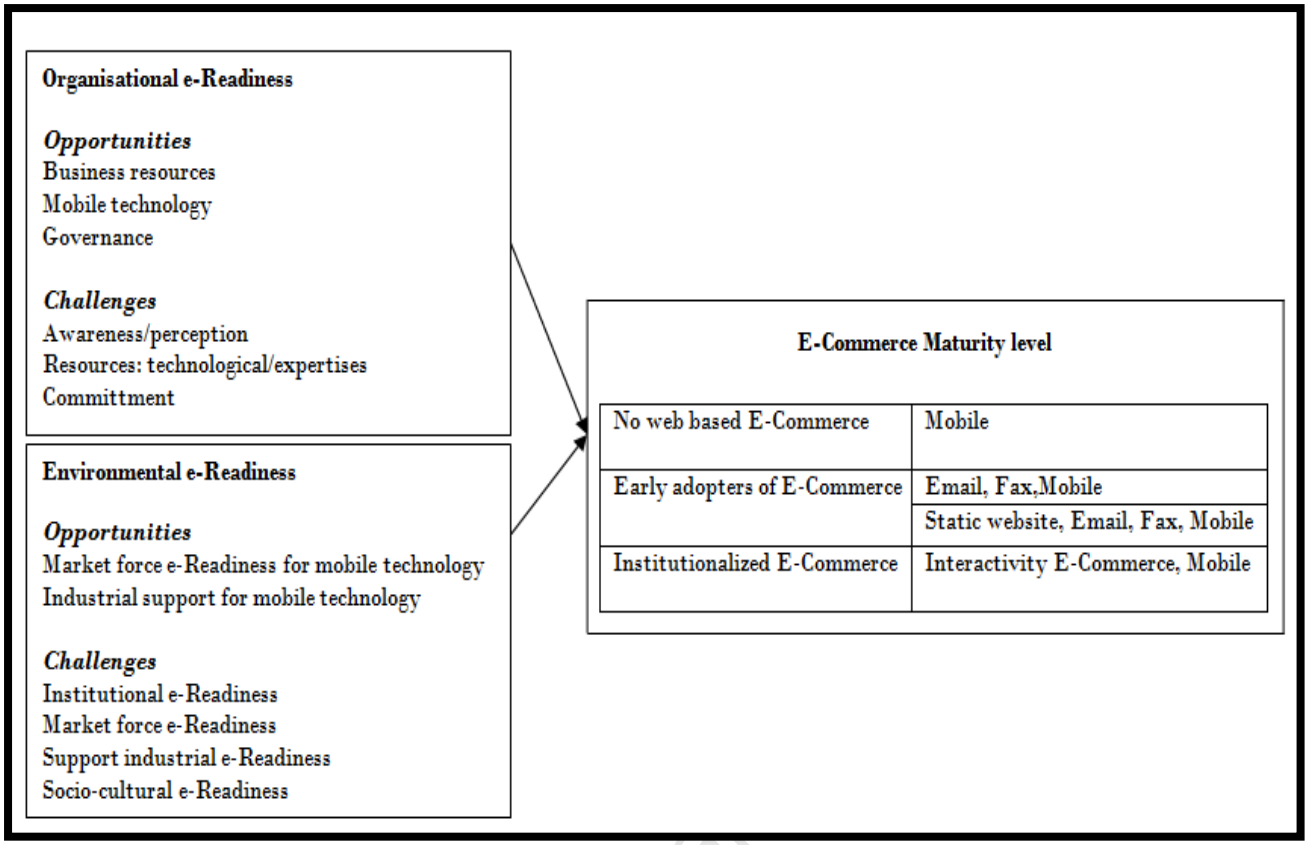


Figure 23: Intermediate findings to the structurational study

One of the factors that the study identifies as a hindrance to web-based E-Commerce that has not been reported by Molla and Licker (2005) is the socio-cultural nature of consumer and business partners. This is a factor that is associated with issues of values and beliefs such as being able to bargain while transacting. SMEs recognise that mitigating these cultural beliefs and assumptions are difficult to do when using web-based E-Commerce in comparison with mobile technology. These two factors, organisational and environmental, have tended to define how SME owners perceive web-based E-Commerce. For them it is the use of mobile technology (for non-adopters); and a website (static/ interactive) with the purpose of performing business functionalities of communication, marketing and electronic payment.

6.6.2 Contribution to literature

The findings in this study show that E-Commerce is always associated with mobile technology by all SMEs regardless of maturity levels. This makes mobile technology an

important feature of E-Commerce. This understanding presents a new contribution to the literature which states that mobile technology is one of the organisational factors that affect E-Commerce positively, a contribution that enhances the literature on E-Commerce in developing countries, specifically, the work of Molla and Licker (2005), which sees organisational factors as being affected only by awareness, resources, management commitment and governance. As a contribution, mobile technology serves as an opportunity through which SMEs are able to rejuvenate themselves from the challenges they face if and when they do adopt web-based E-Commerce. SMEs did not necessarily see themselves as lagging behind in E-Commerce as it is reported in the literature that SMEs lack of institutionalisation is perceived as a concern because it is that which is regarded as the future of most E-Commerce activities as it has the potential to facilitate the integration of LDCs into the global economy (Huff & Kelley, 2005; Dholakia & Kshetri, 2004). They see themselves as participants in the global economy through the use of mobile technology. The findings also indicate the importance of business partners who were typically foreign companies that could provide alternative solutions to technological and resource problems. This is a dimension of Molla and Licker's 2005 business resource which, in this study, is considered to be important for E-Commerce to be institutionalised beyond the interactivity maturity stage.

The qualitative nature of this study further presents insights in how E-Commerce was affected by environmental factors – specifically a better account of how socio-cultural variables impact E-Commerce. This is an important contribution that had not been presented by Molla and Licker (2005) but one that is crucial in the study of technology adoption in least developed countries (Avegerou, 2008; Jarzabkowski, 2004; Wilson, 2003). This finding shows the importance of how the context plays a crucial role in the adoption of technology and how the technology should be compatible with the context in which it is to be situated.

These findings provide a better contextual explanation to the organisational and environmental factors that affect E-Commerce in Tanzania through a qualitative approach that allows for the exploration of the E-Commerce phenomena from the SMEs' perceptive. The better explanation is presented through the opportunities and challenges outlined by the organisational and environmental factors that affect E-Commerce.

Through these opportunities and challenges, the study offers an awareness and understanding as to why SME respondents have not institutionalised E-Commerce beyond the interactive maturity level and why they still perceive themselves as E-Commerce users despite some SMEs not having adopted E-Commerce. This study is a recent attempt at contextualising the study of E-Commerce in a least developed country from an interpretive stance that appreciates how SMEs understand and interpret E-Commerce.

CHAPTER 7: COMPLEMENTARY QUALITATIVE FINDINGS: ANALYSIS OF SME VALIDITY CLAIMS

7.1 Introduction

This chapter interrogates the truthfulness of the claims outlined by SMEs regarding their fundamental and implicit assumption that environmental factors play a significant role in their intentions to adopt and institutionalise E-Commerce. These claims are highlighted in Table 11. The purpose therefore is to validate claims regarding institutional, market forces, supportive industry and socio-cultural readiness. Organizational factors have not been validated against because they were not perceived to be detrimental to the adoption of E-Commerce, specifically to mature E-Commerce (at the institutionalization phase) in comparison to environmental factors.

Opportunities/ Challenges	Themes derived from thematic analysis	SME Claims
Challenges	Lack of institutional e-Readiness	Irrelevant and incomprehensive ICT policy for E-Commerce
		Lack of government commitment to ICT education
		Lack of government commitment to ICT support
		Government not e-ready/resistant to use of ICT/E-Commerce transaction
	Lack of industrial support	Lack of physical infrastructure
		Lack of ICT expertise
		Lack of ICT Infrastructure
		ICT companies and institutions not supportive
		Lack of financial assistance
		Poor service delivery from ISP
	Lack of market e-Readiness	Local consumer not ready for E-Commerce
		Lack of E-Commerce awareness
	Socio-cultural norms	Bargaining
		Lack of trust
		Language
		Dependency syndrome
Opportunities	Industrial support	Mobile technology – good service from mobile providers

Table 11: SME claims on environmental factors that impact intentions to adopt and institutionalise E-Commerce

The rest of this chapter is arranged as follows: Section 7.2 describes the data collection process for analysis which includes the claims made by SMEs as to the organisational and environmental factors that affect E-Commerce adoption; and socio-cultural background data in which SMEs operate. Section 7.3 describes the analytical process followed. The analysis was conducted using the communicative action theory of Habermas, not to only understand what the speaker or writer means, but to test validity claims associated with the action type enacted by the speaker or writer (Ngwenyama & Lee, 1997). In so doing, the reader is able to detect and analyse distorted communications made by SMEs – that is, communicative acts that are false, incomplete, insincere, or unwarranted (Ngwenyama & Lee, 1997). Section 7.4 presents the findings of the study. Section 7.5 discusses the findings and section 7.6 concludes the chapter.

7.2 Data collection

The data for this chapter is firstly derived from SME claims regarding their understanding of E-Commerce which holds that environmental factors play a significant role in whether or not to adopt and institutionalise E-Commerce. To assess the truthfulness of the claims, institutional policies which include the Tanzanian ICT policy (National Information and Communications Technologies Policy, 2003) and SME policy (Tanzania Small and Medium Enterprise Development Policy, 2002); media texts on E-Commerce, telecommunication infrastructure and ICT in general were used as data sources. The policies were chosen first, as they provide the complete institutional account, specifically government record, whereas a participant may consciously or unconsciously leave out crucial information. Data was collected via a desktop search method for government official documents. Although some of the documents were retrieved, most were not updated and were inaccessible. This necessitated a further face-to-face request for government documents. The face-to-face encounter provided an opportunity for an interview with two government spokespersons one from the SME sector on issues of E-Commerce, and another from the ICTs and telecommunication sector.

7.3 Data analysis

7.3.1 Content analysis

The data was analysed using content analysis on the individual articles to determine frequency of use of specific arguments (Cukier et al., 2009). Content analysis is a systematic and quantitative research technique for analysing message content and message handling with the intentions of making replicable and valid inferences from data to their context (Krippendorff 1980; McMillan, 2000). The technique is useful for examining trends and patterns in documents. According to Krippendorff (1980), six questions must be addressed in every content analysis. These include:

1) Which data are analyzed?
2) How are they defined?
3) What is the population from which they are drawn?
4) What is the context relative to which the data are analyzed?
5) What are the boundaries of the analysis?
6) What is the target of the inferences?

With these questions as a guide, the Tanzanian ICT policy (Tanzania ICT policy, 2003) and SME policy became the main data corpora used for this analysis. These samples were perceived to be representative of the government's policies from which E-Commerce and SME institutional regulations and legislations are drawn. The policies were read through several times and analyzed based on the context of SMEs' perception of E-Commerce with the intent of making sense of the data and to learn 'what is going on' (Morse & Field 1995) and obtain a sense of whole with regard to government's stance with E-Commerce.

The analysis was strictly bounded by issues pertaining to the E-Commerce phenomena – specifically, issues regarded as obstacles to advancing to institutionalization. Each policy was regarded as an individual article from which the researcher determined the frequency of use of specific arguments. The arguments were derived from SME claims. For example, SMEs are cognisant of a lack of institutional e-Readiness, and this perception was evident in the following SME claims: the lack of relevant and comprehensive ICT policy for E-Commerce, government's resistance to ICT-based transactions, and support to ICT

education. Each of these claims, presented as themes, became part of the coding system as shown in Table 12 (rows 1 and 2). For example, the theme, 'lack of government commitment to ICT education and awareness' had two categories, namely, ICT education, and ICT human resources/expertise.

Theme	**Government Commitment to ICT education and awareness**								
Category/ SME claim	**ICT education**						**Human Resource/Expertise**		
Keywords	Education	Training	Learning	Teaching	Literacy	Awareness	Human capital	Expertise/ Professionals	Knowledge/ Skills
Frequency/ Instance	25	25	16	6	3	9	14	6	33
ICT Policy statements	The possibility of teaching ICT literacy need not be constrained by an absence of computer equipment, since pupils in schools unable to afford such equipment might be guided to construct model computers out of locally available materials. This allows the pupils to gain an understanding of the principles and values associated with computers, networks and peripherals without having real computers in their schools. If teachers were trained accordingly, this type of ***education*** will reach even the remotest households. A simile is children making mock-up cars and trucks (page 2).						The supply of ***IT professionals*** is considerably less than current demand, especially in the areas of higher skills and experience. Furthermore, job mobility in the ICT sector is very high. Therefore, there is a need for increased emphasis on the ***human capital development*** aspects to address this situation (page 8).		
	Policy objective: give special attention to providing new ***learning*** and ICT access opportunities for women and youth, the disabled and disadvantaged, particularly disenfranchised and illiterate people, in order to address social inequities (page 15).						They have brought about changes in other areas, particularly in knowledge management and ***human resources*** development (page 3).		
	The Government will promote and support the development of qualified personnel for efficient policy-making, regulation and management of information resources and services including the education, ***training and retraining*** of ICT managers, professionals and other operatives (page 15).						In general, there is a shortage of well-qualified ***professionals*** of ICT in Tanzania. There are also no well-established ICT professional profiles, and a standardised process of evaluation or certification of the different courses offered by various training centres is lacking. Access to online and distance learning for ICT is also still limited. Furthermore, opportunities for training are mostly limited to few urban centres (page 10).		
	Policy challenges: Increasing the ***ICT awareness***, knowledge and skills of public servants (page 20).						Policy objective: empower and facilitate Tanzania's participation in the Global **Knowledge** Society (A country or region where ICT is extensively used to enhance knowledge so that higher ***human capital*** brings further improvement to the economy) (page 11).		

Table 12: Frequency analysis of keywords

Each category was further subdivided into several keywords which are associated with it – specific words that could mean the same word in the policy documentations. For example, the category 'ICT education' had six keywords associated with it: education, training, learning, teaching, literacy and awareness (row 3). A process of identifying the recurrence of each keyword, or counting it to determine its frequency of use, followed. The frequency of each term in the ICT policy statement appears in row 4. Each repeated term and concept is conceptualised around SMEs and the E-Commerce phenomena. The number of times an argument or term appears does not provide insight into the meaning of the texts, but it does give some indication of the themes that dominate the discourse as well as the omissions that may suppress understanding (Cukier et al. 2009).

7.3.2 Analysis of validity claims

Apart from content analysis, the data was further analysed using the theory of communicative action (TCA) of Habermas (1979; 1984; 1987) with the intention of analysing the validity claims of truthfulness and comprehensibility of what the SMEs are saying with regard to their perception of environmental factors that affect E-Commerce. TCA is used for analysis to test validity claims associated with the action type enacted by the speaker or writer with the intention of detecting and analysing distorted communications – that is, communicative acts that are false, incomplete, or unwarranted (Ngwenyama & Lee, 1997). The truthfulness validity claim pays attention to the propositional content of the communication. To test the validity of a truth claim, the authors seek to answer the question: 'Is what is said factual or true, i.e. does what is said correctly correspond to the 'objective' world?' (Cukier et al., 2009, 6). Testing criteria used includes a check for falsehood and logical consistency in each claim. To test validity for comprehension or clarity, the validity test focuses 'on whether the communication is complete, sufficiently intelligible, or whether the level of detail too burdensome for the reader or hearer' (Cukie et al., 2008, 5). The focus is in assessing the 'technical and linguistic clarity of the communication of the utterance', specifically on 'whether the message is clear or not or whether it consists of some jargons that make the message difficult to understand' (Ngwenyama & Lee, 1997, 155). Figure 24 depicts the analysis process for this study. References to the empirical material can be found in Appendix 5.

	Themes derived from thematic analysis	SME Claims	Validity Claim	Repertoire
Environmental Factors that affect E-Commerce	Lack of institutional e-readiness	Irrelevant and incomprehensive ICT policy for E-Commerce	Comprehensiveness Truth	ICT Policy SME Policy Interviews (GOV1,2) Media Texts (EM1,2,3,4,5,6,7,8,9,10,11)
	Lack of Industrial support	Lack of government commitment to ICT education	Truth Comprehensiveness	
		Lack of government commitment to ICT support	Truth	
		Government not e-ready/resistant to use of ICT/E-Commerce transaction	Truth	
	Lack of market e-readiness	Lack of physical infrastructure	Truth	
		Lack of ICT expertise	Truth	
		Lack of ICT Infrastructure	Truth	
		ICT companies and institutions not supportive	Truth	
		Lack of financial assistance	Truth	
		Poor service delivery from ISP	Truth	
		Local consumer not ready for E-Commerce	Truth	
		Lack of E-Commerce awareness	Truth	
	Socio-cultural norms	Bargaining	Truth	
		Lack of trust	Truth	
		Language	Truth	
		Dependency syndrome	Truth	

Figure 24: Empirical analysis of validity claims

7.4 Findings

The results are presented as follows: firstly, the content analysis to outline the frequency of key arguments or terms; and then the validity claim attesting to the truthfulness of SMEs' claims.

7.4.1 Content analysis of policies

The content analysis provided the frequency of each keyword associated with each of the themes that form part of what SMEs perceive to be factors associated with E-Commerce adoption in Tanzania (Table 13). The findings of the ICT policy show that the theme

most addressed by the ICT policy was 'government resistance to ICT based transactions' which received 357 related citations from a data corpus of 9807 words of the ICT policy. Most discussed in relation to this theme were ICT/ E-Commerce/websites. The discussion was in association with 'the government's awareness of the importance of ICT/ E-Commerce/websites' in relation to the nation's participation in, and use of E-Business – specifically the challenges that face the proper use of ICTs and E-Commerce in the country. However, there were 334 counts in the policy describing the challenges and potential implementation plans for ICT/E-Commerce/websites; while 'government's actual use of ICT/ E-Commerce/websites' received limited attention (23 counts).

Although the large number of times that this theme appears in comparison with other themes offers some indication of its dominance in the discourse, it should be noted that the frequency of its appearance in the entire policy is quite negligible. The same theme, however, received the lowest count of 4 when the SME policy was analysed. There was no instance of government's use of e-government applications although issues of bureaucracy and government's need for ICT training were identified.

The next theme that received the most counts was 'commitment to ICT education and awareness' which had 137 frequencies of appearance in the ICT policy. The policy addressed key terms such as 'ICT education' 84 times and the key term 'Human resources/expertise' 53 times. The findings of the SME policy content analysis show that this was the theme that received the most frequency counts of 58. Although this theme received higher counts than other themes in the SME policy, this remains negligible, given that the SME policy consists of 9122 words.

SMEs further indicated a 'lack of government commitment to ICT specific endeavours', specifically the provision of financial and ICT support such as training. The ICT policy content analysis reveals that these two key issues were addressed by the policy 73 times with financial support receiving 13 counts and ICT support 60 counts. The results show that minimal attention was given in respect of the provision of financial support to SMEs to acquire and adopt technologies for E-Commerce. Although the ICT subtheme received 58 counts, each instance of these was associated with either the challenges of providing ICT support, or future plans as to how to do it. There was no actual indication of existing

implementation plans of improving the provision of ICT support to SMEs. An analysis of content of the SME policy shows that the same theme received a frequent count of 57.

Environmental factors that affect E-Commerce in Tanzania					ICT policy		SME Policy	
		Theme	Category	Keywords	Frequency		Frequency	
Environmental Factors	Lack of institutional e-Readiness Lack of industrial support Lack of market e-Readiness	Government resistance to ICT based transactions	E-Government	ICT/E-Commerce/websites/ telecommunication/ E-Business	334	357	2	4
				E-government/ e-governance/ corruption/bureaucracy	10		2	
				Public service	13		0	
		Commitment to ICT education and awareness /ICT expertise/ ICT companies and institutions not supportive/consumer readiness	ICT education	Education	25	137	11	58
				Training	25		33	
				Learning	16		0	
				Teaching	6		0	
				Literacy	3		0	
				Awareness	9		6	
			Human Resource/ Expertise	Human capital/ expertise/ professional	20		1	
				Knowledge/ skills	33		7	
		Lack of government commitment to ICT specific endeavours in SMEs/industry financial assistance /service delivery	Financial support	Capital/finance	5	73	21	57
				Loan/ lending	1		4	
				Entrepreneurs	7			
			ICT support	ICT Infrastructure/ physical & software resources & support mechanism	58		20	
				Physical infrastructure	2		12	
		Irrelevant and incomprehensive ICT policy for E-Commerce	Legal framework	Security/cybercrime/ encryption/ digital signatures/ copyrights/ intellectual property	11	37	9	28
				Privacy	2			
				E-Records and e-evidence	0			
			Awareness	Language/local content	18		0	
			Implementation plans	Implementation/ monitoring	6		19	
	Socio-cultural norms	Cultural norms	Culture	Traditions, perceptions and values	14	36	6	7
			Trust	Trust	4		0	
			Language	Local content	18		0	
			Dependency syndrome	Donor	0		1	

Table 13: Content analysis findings of the policies

The other theme that received the second least count of frequency in the ICT policy content analysis was SMEs' perception of the existence of 'irrelevant and

incomprehensive ICT policy for E-Commerce'. SMEs had indicated that policies are crafted but are not comprehensive enough for the conducive conduct of E-Commerce, are not implemented due to a lack of implementation plans, and are not made publicly aware to concerned parties. The results show that the entire theme received 37 counts. The legal framework category received 13 counts; awareness receiving 18 counts with specific attention paid to the challenges of creating local content on the web '… because …while there are many Tanzanian websites, most of these are in English and are not updated regularly' (ICT policy, page 7). Policy implementation plans received 6 counts, and each count was not associated with how exactly the implementation plans of the policy will be conducted, when, and by whom. Similarly, the SME policy content analysis also reveals that the same theme received a total low count of 28. In the policy, the government acknowledges that the legal and regulatory framework is bureaucratic, costly and centralised. The findings of a lack of implementation plans, a legal framework conducive for E-Commerce, and policies that are available in local content, confirms SMEs' perception that although policies are made they are irrelevant and incomprehensive for E-Commerce'. The final theme that received the lowest frequency count in the ICT policy content analysis was SMEs' perception that socio-cultural norms affected E-Commerce. This theme received 36 counts from the ICT policy with language and culture as categories with the highest frequency of appearance. The SME policy count of this theme was 7, a significantly very low mention of the theme.

7.4.2 Analysis of SME validity claims: truthfulness of validity claims

A. Government and ICT education

The findings show that the government is aware of the need for ICT education but acknowledges that the possibility of teaching ICT literacy is constrained by an absence of resources such as hardware, software, computer laboratories, other multimedia facilities and human expertise (ICT policy, page 2). The government, however, pledges to provide ICT education through its policy objectives. For example, the government intends to

> expand and develop the teaching of ICT at all levels of the national system of formal and informal education and training; develop and deploy a nationwide e-

> Education system that supports schools, higher education/training facilities across the country by interconnecting them with each other and with relevant knowledge centres, providing curriculum integration while also generating information to better shape policies, strategic plans and tactical decisions for developing education and vocational training in Tanzania (page 14).

The government recognises that one of the challenges it faces is in 'creating awareness among leaders and the public, and political championing of ICT' (page 12); 'increasing the ICT awareness, knowledge and skills of public servants' (page 20). The lack of awareness of ICTs and E-Commerce was one of the claims made by SMEs and a contributing factor in their lack of E-Commerce adoption. The government 'indicates that it will raise the level of awareness on the role and potential of ICT' (page 11) and bring 'awareness of benefits of ICT access and training to the public' (page 22), as well as 'promote ICT culture, general awareness and political e-readiness in Tanzania' (page 14).

B. Lack of ICT expertise and professionals

SMEs' perceptions of a lack of ICT expertise were corroborated by the ICT policy:

> there is a shortage of well-qualified professionals of ICT in Tanzania. There are also no well-established ICT professional profiles, and a standardised process of evaluation or certification of the different courses offered by various training centres is lacking. Access to online and distance learning for ICT is also still limited. Furthermore, opportunities for training are mostly limited to few urban centres (page 10).

An initiative that SMEs felt was necessary to show commitment was by subsidising ICT education costs which were perceived to be very expensive. The ICT policy does not explicitly state that it would subsidise ICT education, but provides means of alleviating some challenges of providing ICT education like for example stating that ICT literacy teaching to be guided by a construct model of computers out of locally available materials (ICT policy, page 2). The lack of subsidy of ICT education is seen as a hindrance to SMEs' use of ICTs and E-Commerce since subsidy programmes such as scholarships and non-binding loans can be instrumental in showing government's commitment to ICT

education and ultimately the development of the ICT human resources expertise (EM_{11}). Further corroborating evidence for SMEs' claims have been made by the Tanzanian Ministry of Higher Education, Science and Technology who indicated that training is quite expensive and 'it is apparent that the cost cannot be borne by many parents because of poverty' (EM_1). A situational analysis conducted on the ICT education in Tanzania revealed that 'limited financing and affordability of tuition by students' were typical challenges to the adoption and use of ICT by the general public and this impacted negatively on market e-Readiness for E-Commerce, leading SMEs to claim that there was no Government commitment to supporting SMEs with E-Commerce, specifically in the provision of ICT specific training and financial support.

C. Government commitment to support SMEs in ICT endeavours

Both institutional policies acknowledge the lack of financial support for SMEs and have pledged to provide the necessary support. For example, the government states in the ICT policy that it will 'encourage appropriate lending mechanisms that foster a dynamic climate for entrepreneurs to venture into ICT and related sectors' (page 13). In the SME policy, the government has stated its willingness to 'enhance financial reforms aimed at further liberalisation of the financial sector and the creation of financial intermediaries to cater for SMEs' (page 21). A willingness to provide ICT support in the form of training is also mentioned. For example, the SME policy states that 'technology advancement and transfer are important aspects for SMEs' development but that SMEs have limited access to technology development partly because they lack the relevant information'. It therefore intends to 'facilitate acquisition and adaptation of technologies as well as enhance networking between R & D Institutions and SMEs in a bid to upgrade technologies so as to raise the productivity and competitiveness of the sector' (page 19). Although the government shows initiatives to facilitate ICT education and awareness, an interview with a government employee (GOV_1) for the SME sector indicates otherwise:

> The ICT section is still not considered as important, in fact working here and having this department in place is challenging because we don't get enough funds even though it's a government entity. What we get from the government is just the salary and we are supposed to generate our own income to do our daily

> activities. This is a problem - they lack commitment. They tell us to compete in the market for a tender as if we are just any other ordinary business and this is a problem because it's tough to get funding to acquire that tender, besides the industry associates government with bureaucracy, corruption and late payment – they barely want to work with us.

The interview shows that government entities themselves that deal with ICTs are not prioritised and supported. It is therefore quarrelsome as to whether government is truthfully having intentions to facilitate acquisition and adaptation of technologies as well as enhance networking between R & D Institutions and SMEs given that they are not committed to supporting the same government entities.

D. Lack of industrial support

SMEs' claim that there is minimal support from the industry, specifically with regard to the ICT education of students who needed ICT training, internships and exposure. These claims are corroborated by the SME policy: 'SMEs have limited access to technology development partly because they lack the relevant information…the problem is further compounded by the existence of industrial support institutions which are weak and do operate in isolation without focusing on the actual requirements of the SME sector'. The SMEs further claim that the physical and ICT infrastructure and industry were not e-ready for E-Commerce. This is acknowledged by the government (SME policy, page 16):

> The poor infrastructure in Tanzania including working premises, roads, cold rooms, warehouses, power, water and communication adversely the development of the SMEs. Even where these services are available, the supply is unreliable and costly. The very poor state of infrastructure makes it difficult to attract even local investors to the rural areas where almost 80% of Tanzanians live.

The ICT policy also states that it

> will promote, stimulate and encourage the use of ICT to improve the provision of safe, comfortable and seamless transport infrastructure and services, both countrywide and linking Tanzania to the rest of the world (page 19) and ensure

> that a reliable state of the art ICT infrastructure, of adequate capacity, high-speed and countrywide coverage is developed (page 13).

because the coverage of the network infrastructure is limited to urban areas. Once again 'these are proposals but the actual implementation plans are not provided which can facilitate smooth operationalisation of programmes and projects with clear demarcation of levels of accountability' (SME policy, page 27). Based on these findings, SMEs' claim that the physical and ICT infrastructure in Tanzania was not conducive for E-Commerce have been found to be factual, with supporting evidence from both the ICT and SME policy statements.

E. Government resistance to ICT use

SMEs claimed that government resistant towards ICT use. The findings show corroborated evidence of the truthfulness of this claim in the ICT policy:

> Various arms of government have made significant progress in deploying ICT in e-government solutions. These solutions can be categorised into both e-government and e-governance solutions. In the category of e-government, several departments are transforming their operations by deploying ICT. However, no mechanisms exist for ensuring that these major initiatives are coordinated or developed within a holistic strategic government plan. To make further progress and reap additional rewards, government needs to develop a comprehensive and holistic e-government strategy for urgent implementation (page 8).

The government's lack of a mechanisms for ensuring that both e-government and e-governance solutions are coordinated or developed within a holistic strategic government plan; and the lack of a comprehensive and holistic e-government strategy for urgent implementation; is an illustration of government's lack of actual use of ICTs in their business processes, specifically with SMEs. There is an acknowledgement that e-government is being conducted with 'several departments' within government but it is not explicitly stated that it is being conducted with external business entities such as

SMEs. This is evidence that supports SMEs' claims of government's resistance to ICT-based transactions.

F. Policies are not relevant and comprehensive for E-Commerce

SMEs claimed that E-Commerce was strongly hampered by the presence of irrelevant and incomprehensive policies which were also not accessible to most people. Through the ICT policy, the government acknowledges the absence of a conducive environment for the conduct of E-Commerce and states that one of its challenges is in 'enacting specific and effective legislative instruments on privacy, security, cybercrimes, ethical and moral conduct, encryption, digital signatures, copyrights, intellectual property rights and fair trade practices' (page 16). It acknowledges that 'only few local websites recently began offering limited **e-**business services. However these services are constrained by the lack of a national payment system, local credit cards, and a legislative framework appropriate for e-business' (page 8). In both policies, the government makes proposals to address the challenges that face SMEs and E-Commerce. However, the actual 'implementation plans are not provided which can 'facilitate smooth operationalisation of programmes and projects with clear demarcation of levels of accountability' (SME policy, page 27). An implementation and monitoring plan is essential because 'effective implementation of any policy depends on clarity on assigning responsibilities and roles to different stakeholder's accountability' (SME policy, page 27). Unfortunately the ICT policy does not state specific roles and responsibilities. This lack of accountability leads to what SMEs perceive as lack of institutional e-Readiness for E-Commerce. The lack of an implementation plan, a legal framework conducive for E-Commerce, and policies that are available in local content, confirms SMEs' perception that although policies are made they are 'irrelevant and incomprehensive for E-Commerce' ;thereby conforming the validity of the truth claim.

G. Socio-cultural factors impacting E-Commerce

A claim made by SMEs was that web-based E-Commerce was not compatible with the socio-cultural conduct of business in Tanzania. An investigation in these claims against the ICT policy reveal that one of the challenges was in using the Kiswahili language for content creation (page 21) … because …while there are many Tanzanian websites, most of these are in English and are not updated regularly (page 7). Language is therefore a

barrier to web-based E-Commerce in Tanzania. An interview with government employee (GOV_1) corroborates these findings:

> ...once you try to explain the importance of the website to them [SMEs] and how they can use it, they find it useful...but language as a problem also kicks in. So what we will do is to host their websites for some time with an emphasis on local large businesses such as Shoprite, Game, Shoppers etc....some of the SMEs have started doing that and selling to these large business.

The culture of bargaining was not reported in any of the policies and therefore could not be verified, but issues of corruption and a culture of mistrust was reported by government employee (GOV_2):

> The culture doesn't support development - we need to do something about it...it's frustrating and if you try to change the system, they will say that guys is pretending to be British and besides, if you try to help like you call them into a meeting, they will all be looking for a khaki envelope for payment. If that workshop doesn't have an envelope, they won't come. Trust me, they won't come! How do you trust people like these – to trust them so much that you can go online and buy without seeing the person, when in real life you know everyone wants to reap you off?

7.4.2.1 Comprehension validity claims

A. Government commitment to ICT education

The validity test for comprehensiveness of the policies show that SMEs' claims that there is a lack of government commitment to ICT education, are valid, in that the policies are not thorough in capturing pertinent ICT education issues. For example, the ICT policy has come under scrutiny from various nongovernmental stakeholders who point out that the policy is 'too narrow and addresses issues of training very lightly (EM_2), it lacks adequate conception on training ICT' (EM_3) to such an extent that opportunities for ICT related training are severely restricted and it is very difficult for even an average government official to update their ICT skills (EM_4). Although the government has launched ICT education, there remains no training policy in place (EM_3) and if issues of training get addressed, most are implemented by international organisations such as the

Swedish International Agency (SIDA), International Institute for Communication and Development (IICD) and UNESCO, leaving little home ownership and enthusiasm from locals. UNESCO has identified the country as being at risk of not attaining its goals for adult literacy (EM11), despite the fact that the education sector still receives between 10 and 20 per cent of the government budget, of which 50 per cent is allocated to the primary education sector, where there is no ICT-related learning ($EM_{5,6}$). Although short courses are 'sometimes offered they tend to be generic, based too heavily on developed-country models and contexts and the training is lecture-based, which is less effective as a method for applied learning' (EM_7).

B. Policies are not relevant and comprehensive for E-Commerce

The validity test for comprehensiveness and clarity of the policies show that SMEs' claims are valid in that the policies are not 'sufficiently intelligible' for Tanzanians to comprehend as they are presented in English, a language that most people find difficult to understand (ICT policy page 7, 21). The validity test for completeness assesses the thoroughness of the message from the speaker. The findings of testing the claim for completeness show that the policies are not thorough enough for the conduct of E-Commerce because there are no institutional laws favouring electronic transactions that relates to the legalisation of digital signatures, cybercrime, protection of databases and copyright issues (EM_8). Digital signatures are not admissible in court because the country's Evidence Act fails to provide for electronic signatures and the meaning of the signature does not include a signature in electronic form ($EM_{9, 10}$). Without legalising computer-related evidence, international collaboration, stipulated by the ICT policy, with regard to E-Commerce remains uncertain.

7.5 Discussion

The findings from the content analysis show that the ICT policy and SME policy had a very low frequency count of SMEs' claims. The implication is that the message content of each of the policies did not favourably address SME challenges. For example, there was a very low frequency count of claims regarding institutional and market e-Readiness. These

findings are further confirmed by the truthfulness validity claims which show that the Tanzanian government finds the possibility of providing ICT education, ensuring E-Commerce and ICT awareness a challenge. The verification of these claims has a detrimental effect on E-Commerce because government commitment is crucial, especially if 'the ICT policy is now the sole compass for all ICT activities in Tanzania' (Menda, 2010, http://www.tanzaniagateway.org), and should therefore ensure that matters pertinent to E-Commerce are addressed ,such as training and creating a conducive legal environment through the development of policies that safeguard electronic transactions (Schware, 2005; Petrazzini &Kibati, 1999). This is important because of the claims that the ICT policy is not relevant and comprehensive enough for E-Commerce conduct; and thatpolicies lacked clarity and relevance to SMEs who found it difficult to access and understand due to the fact that it was presented in a language they are not familiar with –thereby creating a barrier to many SME owners whose first and second language is not English (Mansell, 2004; Gattiker et al., 2000).

Further, SMEs' claims regarding the lack of industrial support received very low frequency counts in both policies. The truthfulness of this claim was investigated and the results confirmed the claim. Specifically, the government acknowledged the lack of financial institutions' readiness to support E-Commerce endeavours (ICT policy, page 8); and the lack of a conducive physical environment for E-Commerce (SME policy page 16). The findings show that, by having a low frequency count for issues such as a a lack of institutional e-Readiness, market e-Readiness, industrial support and socio-cultural e-Readiness; and the confirmation of SMEs' claims regarding truthfulness and comprehension, is an indication that SMEs' claims regarding their perception of environmental factors that affect E-Commerce in Tanzania are valid.

7.6 Conclusion

The purpose of this chapter was to interrogate the truthfulness of the claims outlined by SMEs regarding organisational and environmental factors that affect E-Commerce adoption and institutionalisation in Tanzania. The analysis followed a content analysis approach of institutional policy documents to determine frequency of use of specific

arguments that either support or negative SMEs' claims; and the theory of communicative action with the intention of analysing the validity claims of truthfulness and comprehensibility of what SMEs are saying with regard to their perception of environmental factors that affect E-Commerce. All SME claims regarding the lack of institutional e-Readiness for E-Commerce, market e-Readiness, industrial support and social cultural e-Readiness were interrogated against validity claims of truthfulness and comprehensibility. The findings are consistent with the earlier quantitative and thematic analysis findings.

The content analysis performed on the policies to determine frequency of use of specific SME claims showed that policies which should address the Tanzanian E-Commerce phenomenon were not appropriately tailored to facilitate its adoption and institutionalisation by SMEs. The focus of the communication in the policies was, therefore, not on the core factors that affect E-Commerce as perceived by SMEs since the total count for these factors was negligible in comparison with the total number of words in each policy. From this quantitative use of content analysis the deduction is a poor attitudinal and behavioral response by government to issues of E-Commerce in Tanzania; and this response induces a negative psychological state of SMEs towards adoption and institutionalisation of E-Commerce. Although content analysis of institutional policies as a triangulation method against SME claims did not discern any underlying motives as to why E-Commerce was not given its deserved attention, it did show that there is a need for institutional reassessment of E-Commerce policies. The validity claim analysis did not reveal distorted communications made by SMEs but it did corroborate the qualitative results. The content and validity claims' analysis in this study, therefore, were complimentary methods that provided corroborating evidence of the qualitative results. This can be used to enhance theory when seeking confirmatory evidence of qualitative result findings.

CHAPTER 8: STRUCTURATIONAL ANALYSIS

8.1 Introduction

The empirical findings of the three prior analyses provided evidence that SME owners perceived E-Commerce to be affected by organisational and environmental factors. Based on these findings, this chapter uses the structuration theory as a theoretical lens to facilitate understanding of how these factors are produced and reproduced through SMEs' situated practices. Specifically, the chapter seeks to understand how the empirical findings are constituted by, and is the result of, structures within the social contextual setting of a Tanzanian discourse.

The rest of the chapter is organised as follows: Section 8.2 links SMEs' perceptions and assumptions of E-Commerce to the construction of structures of signification and how the same structures recursively yield SMEs shared understanding and sense-making of the E-Commence phenomena in Tanzania. Section 8.3 relates how organisational and environmental resources which SMEs have access to contextually constitute structures of domination and how these resulting structures become a source from which SMEs gain the capacity to exercise their power in making a decision towards the adoption and institutionalisation of E-Commerce. Section 8.4 relates how SMEs' organisational environmental rules and procedures about E-Commerce constitute structures of legitimation, and how such structures tend to legitimise some practices and sanction others. Section 8.5 relates the unintended consequences resulting from (i) SMEs' perceptions, assumptions and understanding of E-Commerce; (ii) their use of available resources to exercise their power in making a decision towards its adoption and institutionalisation; and (iii) enacted rules and procedures about E-Commerce. Section 8.6 discusses the findings and Section 8.7 concludes the chapter.

8.2 Relating SMEs' perception to structures of signification

This section sought to link SMEs' perceptions and assumptions of E-Commerce to the construction of structures of signification and how the same structures recursively yield SMEs' shared understanding and sense-making of the E-Commence phenomena.

Structures of signification describe structures that yield meaning, understanding, background assumptions and sense-making practices (Ogden & Rose, 2005) that inform mutual understanding which become institutionalised, forming an interpretive schema (Giddens, 1982) that agents use to communicate with each other and make sense of the context they act in (Willmott, 1981; Lyytinen & Ngwenyama, 1992; Sydow & Windeler, 1998). It consists of general language rules, symbolic representation and meaning necessary for communication (Sarason et al., 2006).

8.2.1 Static and interactive websites as structures of signification that are produced and reproduced by SME agents

Tanzania's SMEs' assumptions and meaning attached to web-based E-Commerce were firstly associated with a website that ranges from static to interactive and that not necessarily has to perform transactive and integrative functionalities., Websites were thus often 'not implicated in any recurrent social practice, and thus no rules and resources' were enacted because they were rarely used (Orlikowski, 2000, 291). This is not surprising, given that Tanzanian consumer awareness of electronic communication via computers is very limited due to the high ICT costs associated with training, and the cost of accessing computers. Most people still rely on public ICT facilities such as telecenters, cybercafés, and information access points, which make the access possible, because of the more affordable cost associated with sharing as compared to individual home ownership of ICTs and individual network use fees (Colle & Yonggong, 2002). Thus although websites were associated with a positive image, symbolising social status, they were also perceived as complex and therefore did not often feature in SMEs' everyday practices. With this realisation, SME owners made an informed choice to forgo investment in institutionalised web-based E-Commerce and choose to invest in mobile communication. The understanding that web-based E-Commerce was associated with a website that ranges from static to interactive and not necessarily has to perform transactive and integrative functionalities; became institutionalised to form a blue print which SMEs used to understand E-Commerce. The blue print became the tool for guidance on how to behave towards E-Commerce undertakings in Tanzania and is used to enable and constrain business communication during interaction within the organisation as well as with

trading partners. In so doing, SME owners produce structures of signification which in this context describe the minimal use of websites.

8.2.2 Mobile technology as structures of signification that are produced and reproduced by SME agents

Tanzania's SMEs' assumptions and meanings attached to web-based E-Commerce was secondarily associated with the use of mobile technology. SMEs indicated that they see no need to invest in institutionalisation because mobile technology, especially mobile financial services, were already fulfilling their transactional functionalities. The communicated understanding ('blue print') that E-Commerce is also the use of mobile technology provided SMEs with the means of conducting transactive web-based E-Commerce functionalities and led to communicative acts of providing mobile resources to employees such as Internet quotas and credit quotas for business calls. By supporting the use of mobile technology, management unconsciously articulates and reinforces its understanding of E-Commerce to the rest of the organisation, creating an interpretive schema that associates E-Commerce purely with a hybrid of a static website and mobile technology. That is, by adopting mobile devices and downplaying the use of websites, SME management presents the enthusiasm and a strategy for mobile communication which it communicates to employees. However, this enthusiasm constrains other forms of communication such as email, and even face-to-face, since itis regarded as the most readily available and affordable means of communication. Mobile devices, therefore, can be seen as constituting a structure of signification since signification is about signs which could include the language, clothes or any other tool used during an interaction for communication purposes (Callahan, 2004). As the mobile device becomes a recurring tool used in business practices, SMEs begin to take for granted the fact that they 'know how' to use it, and, in so doing, they begin to lose sight of the way in which their 'knowing how' is an active and recurrent accomplishment (Orlikowski, 2002). By championing the use of mobile devices for business operations, SME owners are participating in the creation and recreation of structures of signification. That is, mobile technology use describes structures of signification which produce meaning and understanding involving

E-Commerce in Tanzania (Ogden & Rose, 2005) which eventually serves to guide the way SMEs behave with regard to E-Commerce.

8.2.3 Business resources use as a structure of signification that is produced and reproduced by SME agents

SMEs' understanding of web-based E-Commerce was also influenced by an understanding that institutionalised E-Commerce requires business resources, specifically partnerships with foreign companies in the developed economies. This is necessary to mitigate most of the local web-based E-Commerce's challenges, such as continuous management of servers which was deemed impossible in Tanzania due to electricity cuts; and a lack of ICT expertise, financial capital and relaxed regulations on operations. Thus, the meaning which SMEs attach to E-Commerce is linked to the strength and willingness of their business partners to provide these benefits. This communicated understanding (blue print) has constrained web-based E-Commerce because few SMEs could create or maintain such partnerships. SMEs that were not able to do so engaged in conscious communicative acts of not transcending to transactive and integrative web-based E-Commerce; and in so doing, reproduced existing structures of signification that associate institutionalised web-based E-Commerce with the need for effective ICT business partners from developed economies.

8.3 Relating SMEs' perception to structures of domination

This section examines the structured properties of social systems which SMEs draw upon during interaction to acquire power that can effect change in their businesses. The structured properties of social systems are resources which become the basis for acquiring the capacity (power) to effect change and, in so doing, contribute to the production and reproduction of structures of domination (Giddens, 1984; Crowston et al., 2001). Several important concepts can be articulated here, all relating to the formation of structures of domination. The first concerns the resources drawn on and reproduced by knowledgeable SMEs during their series of interaction. Resources can be authoritative if derived from the co-ordination of the activity of human agents; and allocative resources, if derived from

the control of material products or aspects of the natural world (Giddens, 1984). The second is the power derived from having the ability to exploit the available resources during agent's series of interaction. The third concerns the structured properties which produce and reproduce legitimised resources. The resources presented in this study were perceived as opportunities and include websites, mobile technology, management support, industrial support from mobile vendors, and business resource.

8.3.1 Websites as as structures of domination that are produced and reproduced by SME agents

Although websites were perceived as complex to implement due to the lack of technological resources and expertise, a website presence was a resource considered to improve an organisation's image even though it did not necessarily bring consumers to it (SME_6), and was used for advertising and marketing purposes. SMEs with a website are perceived to be more sophisticated than those without. They were also able to exercise their power in the Tanzanian market by exploiting the minimal benefits websites offered them, such as advertising/marketing of products and simultaneously putting up a perception appearance of sophistication within the industry. In so doing, websites (static to interactive) becomes the basis from which some SMEs acquire power during interaction with (potential) trading partners. That is, SME respondents of this study utilise power in interaction by drawing on the website as a resource they have access to contextually to transform interactions.

8.3.2 Mobile technology use as a structure of domination that is produced and reproduced by SME agents

A resource that was more recurrent was the use of mobile technology which was perceived as requiring a lesser learning curve compared with transactive web-based E-Commerce; needs lesser investment from the SME; and reduced the hassles of Internet problems because of bandwidth or electricity (SME_{11}). SMEs were thus able to use mobile technology capabilities to achieve functionalities such as communication and buying and selling activities without being constrained by the inadequacy of a website and E-commerce infrastructure issues. In so doing, they were provided power to change their

current practices. Relying solely on websites, and perceiving E-Commerce from a common perspective of simply the buying and selling of products and services online, presented SMEs with more opportunities than perceiving it as a merger of both websites and mobile use. This new perception, which resulted in the enactment of new practices, is the ability of SMEs' knowledgability of the contextual resources that are available to them, and the capability to be able to use these resources. SMEs' deviation from the traditional perception of E-Commerce as simply buying and selling on the website to a more context specific understanding of E-Commerce that involved the use of mobile technology to facilitate its transactional capability, is an example of what Boudreau and Robey (2005) explain, namely, that human agents may be resourceful enough to overcome technology's material constraints, thus rendering any technology malleable.

Although mobile phones give SMEs the power to overcome technological constraints, they also pose a problem to employees. Employers are able to use employee's devices without a formal consultation policy on how and when to use them. Employees feel powerless to put pressure on management, as respondent SME_{11} explains 'and there is no incentive for using my own phone and I personally feel I don't have any influence over the decision of them using my phone – they are my boss after all'. Employers' failure to recognise that mobile devices are technological artifacts that need to be governed by rules caused resentment in their employees. Employers who use the mobile devices of employees have changed the work practices of employees without documented rules. There is, hence, evidence of contested power relations between employees and managers as a result of mobile device usage in SMEs. The enacted new rules and norms gave SME managers power over others in determining the principles of distribution and exchange so that the distribution of allocative resources tends to be embedded within the distribution of authoritative resources' (Giddens, 1979). The SME has, thus, become a site where managerial power is employed through dividing practices such as the use of desirable identities such as being a 'good manager' and the sanctioning of behavioural actions. The behaviour of SME employees are, therefore, defined and normalised through ideological control, leaving them, in Foucauldian terms, as docile bodies who are able to contribute to the productive patterns (Selwyn, 2003).

8.3.3 Management support as a structure of domination that is produced and reproduced by SME agents

Management support is perceived as a resource by all organisations, specifically for mobile technology. Due to the advantages accrued from mobile financial services and the communicative capability that the mobile phone offers, SME management shows remarkable support for mobile use in business. Management support is a resource that comes with financial implications as witnessed in the empirical findings, for although managers do not purchase mobile devices for the company to be used by employees, they do ,however, provide financial support such as (i) daily air time/credits that can be used to communicate with trading partners or perform transactive activities; (ii) the loading of Internet quotas for some employees who had marketing-related activities; and (iii) the once-off purchase of more advanced and sophisticated mobile devices for marketing managers. The purchase of the last of these was witnessed in only one SME that had reached an interactive E-Commerce maturity stage. The findings indicate the importance that management associates with mobile phones despite employees' discontent that the daily air time/credits allowance is not adequate to perform the daily tasks. Management's endeavour to support the usage of mobile phones is a resource that SMEs use in their E-Commerce business endeavours. The ability of management (SME owner) to provide financial support for the usage of mobile technology gives the SME the power to participate in an industry that has relied heavily on mobile technology for business. Financial support is an allocative resource which management provided, and with this resource, SMEs are able to exploit the advantages of participating in a commercial economy that was mobile driven. SMEs that purchased airtime credits, mobile devices and Internet quota for their employees were able to utilise their power in interactions by drawing on their financial resources to contextually transform interaction sequences.

8.3.4 Industrial support as a structure of domination that is produced and reproduced by SME agents

Although SMEs thought that they received minimal support for E-Commerce from industry, they indicated that there was industrial support from mobile vendors because they were easily accessible, and provided mobile transactive capabilities and

communication services at a fair rate in comparison with banking institutions ($SME_{12, 16}$). SMEs perceived mobile vendors as a resource from which they could draw to carry out business and communication activities during their series of interaction. Through mobile vendors, SMEs were able to acquire power during action – power which they were unable to acquire from traditional banking systems. By acquiring this power, and using it in their interaction, that is by legitimising it, SMEs contribute to structures of domination (Willmott, 1981; Crowston et al., 2001).

8.3.5 Business resource as a structure of domination that is produced and reproduced by SME agents

The business resource, specifically partnerships with foreign companies allowed some SMEs to transcend from simple adoption to the interactive institutionalisation stage of E-Commerce by providing the means to solve ICT problem. These include a continuous management of servers which was deemed impossible in Tanzania due to electricity cuts (SME_{23}); providing training and advice due to the lack of local expertise capability ($SME_{6,13}$);and providing financial capital and relaxed regulations on operations (SME_{13}). For example, respondent SME_6 elaborated the importance of foreign partners in his business:

> the other website at head office was developed formally by a staff member in-house but it was later modified by our German partners who also provide us with specific training. Our webserver is also in Germany because (1) we have our partner there (2) for security reasons; (3) they have a good infrastructure which isn't available here. So we decided to host it there.

Foreign partners, who provided the necessary assistance such as those experienced by SMEs in this study, are seen as resourceful agents that SMEs can draw on to transform their interactions with trading partners. SMEs that have access to this resource were able to acquire power during these interactions by drawing on the partnership resources such as acquisition of ICT training and advice, financial capital, web design and development services. In so doing, such SMEs were able to acquire the capacity to effect change in their business interaction. SMEs need for partnership collaboration is not a new phenomenon because firms gain access to new resources by partnering with others who

might provide those lacking resources (Kim & Kiyoshi, 2007); and 'the challenges faced by SMEs in technology industries can be different from those in traditional industries'. Players in technology industries have to cover more costs and, increased risk and are more likely to form partnerships than their counterparts in traditional industries. The empirical findings show that SMEs in the ICT industry were the ones that formed partnerships. Li and Qian (2007) support these findings indicating that partnerships may be an effective prescription for SMEs in technology industries but not necessarily for those in traditional industries as they were able to acquire scarce resources which are associated with positive firm performance and international experience, external advice in fields such as business strategy (Robson & Bennett, 2000), exposure and the opportunity to understand the host business environment which Reuber and Fischer (1997) indicate is important for establishing foreign strategic partnerships. Partnership, therefore, provided these SMEs with the power to exploit the contextual business opportunities and constraints to their advantage.

Although partnership with foreign partners was considered an important component for web based E-Commerce institutionalisation, few SMEs had the ability to acquire such partnerships because of some of the stringent regulations imposed by the foreign company on the SME. SMEs that acquired certification from accredited international ICT companies such as Microsoft were perceived by customers and trading partners (i) to provide quality standard, not 'grey' or 'pirated', (ii) and to possess more know-how than SMEs without such certifications ($SME_{6,9,13}$). Such SMEs had a positive reputation and were often approached by potential large companies and the government (the largest user of ICTs in the country). SME_9 explains that certification is important to them because 'the market depends on people like us who are trusted advisors. Yes, I believe in trust and I know we are the trusted company in our business. You will find that we have many certificates outside the entrance'. By being a 'trusted advisor', SMEs with certification gained respect and are thought to have the authority in ICT skills. SMEs with accredited certification courses utilised the perceptions attached to such SMEs as a resource from which they are able to acquire power during their interactions with trading partners. These certification courses were, however, seen as difficult to acquire due to their high costs ($SME_{3, 9}$). SMEs that were unable to meet these requirements were powerless, as

they were unable to exploit the available resources (partnership possibilities) which provided the necessary specific skill sets and technological infrastructure required to reach adoption and specifically institutionalisation of E-Commerce. Thus although partnership programmes assisted SMEs, few could afford to have a partnership with large organisations which tended to have more influential power in dictating how the relationship between themselves and the SME would be conducted. SMEs that were unable to confirm to the protocols of such a large organsation tended to partner with willing small foreign organisations. Other SMEs were able to harness the advantages of social networking forums – a resource that was perceived to alleviate the lack of ICT expertise, specifically for SMEs in the communication, electronics, computer and tourism and entertainment industries. There SMEs were inclined to perform software development and website design. Social networking forums were perceived to be cost effective and resourceful because overhead costs such as travel, accommodation and living costs are avoided. SMEs were able to exploit social networking forums to avoid costs associated with ICT training and outsourcing of expertise. In so doing, they utilised power in interaction by drawing on the social networking forums (facilities) they have access to contextually to transform interaction sequences, thereby contributing to structures of domination (Willmott, 1981; Crowston et al., 2001).

8.3.6 Outsourcing as a structure of domination that is produced and reproduced by SME agents

SMEs that were unable to form partnerships with foreign ICT companies tended to outsource their ICT functionalities. Outsourcing has been described as a key issue of concern for the sustainability of ICTs (Mlitwa & Ndhlovu, 2009; Avgerou, 2008; Kimaro, 2006). ICT outsourcing was a common practice exhibited by SME owners because the process of adopting and then undergoing a process of learning and adaptation during which skills are acquired and adaptations are made (Steinmueller, 2001) was expensive. Two instances of outsourcing were observed in which there are existing power relations exhibited between the SME and supplier. The first instance was when the outsourcer exhibited dominance in their decision-making compared with the supplier. For example, whilst working for SME_6, one of the outsourced companies (supplier) noted that 'most of

them [SME] don't know the specifications of what they need. What will work for them they just want it because they saw Mr. X and Y having it - this is a problem'. Thus although the SME had outsourced its service, it had the power to choose as a result of the outsourcing process regardless of the consequences. This was a problem to the supplier who, despite warning the SME against business requirements, usually failed to change the SME's mind. SMEs were more driven by competitive pressure to conform rather than on core competencies, business requirements and resource availability. A more rampant instance was the case in which the supplier was the one who exhibited more power as it possessed the technical know-how. SMEs complained of the supplier's lack of commitment to their tasks, and were forced to abide by the supplier's advice 'because we depend on them, we have no choice but to accept how long it would take to fix the problem' (SME_{19}). Due to the lack of ICT expertise, suppliers who were able to provide the service were overwhelmed with clients; and tended to pay attention to firms larger than themselves. As such, SMEs received low priority and minimal commitment as working for them was a part-time occupation for most suppliers. In this instance, the supplier was able to use their power of knowledge (their expertise which SMEs so desperately need) to their advantage by paying less attention to SMEs in comparison with larger firms. In so doing, suppliers exercise their control by the use of their knowledge/expertise superiority over SMEs. Such lack of power by the SMEs could results in their disinclination to adopt E-Commerce because they do not possess the capability to change the relationship they have with the supplier. The suppliers had access to and control over SMEs by the knowledge they possess; making 'power and knowledge intertwined' (Gaventa & Cornwall, 2001). These findings support Mechanic (1692) who states that power results from access to and control over persons, information, and instrumentalities. It is therefore advised that the power relations surrounding the outsourcing of ICTs by SMEs in LDCs be seen as an important element because of the nature of the knowledge, and the power it exerts during its practice. It is more so important in LDCs because outsourcing is one of the many solution to SMEs response to their limited in-house, and often in-country, IS expertise (Avgerou, 2008) as it has the potential to reduce costs, allows the organisation to focus on their core business processes, reduces time-to market and increase overall competitive advantage (Power et al., 2004; Dibbern et al., 2004).

8.4 Relating SMEs' perception to structures of legitimisation

This section examines structures of legitimisation which become established by SMEs conventions which are interpreted and verbalised by SME owners and employees as to whether certain behaviours are right or wrong, legitimate or illegitimate and accompanied by sanctions and rewards. Important concepts arising in the formation of structures of legitimisation are (i) the norms which provide the means, techniques or generalisable procedures agents use in a situated action context and characterise how agents make use of rules and resources therein (Sydow & Windeler, 1998; Jones & Karsten, 2008); (ii) the sanctions/reward systems invoked when appropriate rules of legitimation are not adhered to; and (iii) the ultimate rules that are articulated and sustained through rituals, socialisation practices, and tradition which produce and reproduce structures of legitimisation. The empirical findings suggest organisational and environmental norms associated with E-Commerce and how these norms become institutionalised to become generalisable rules that are contribute to the production and reproduction of structures of legitimisation. There are norms specific to SMEs' maturity level and those that were common to all SMEs. The common norm established by all SMEs was the use of mobile technology for business communication and transactive purposes; and socio-cultural norms such as bargaining, mistrusts, language barrier and dependency syndrome.

8.4.1 Mobile technology use as a structure of legitimation that is produced and reproduced by SME agents

The use of the mobile device for business transactions was perceived as a way of deviating from the difficulties experienced from banking institutions of acquiring and maintaining a bank account; and a way of bypassing obstacles presented by web-based E-Commerce, such as the transactive capabilities which were deemed difficult to operationalise in Tanzania. By deploying mobile technology in business transactions, SMEs unconsciously created new rules and practices which became institutionalised by management. Although the use of mobile technology as a rule for business conduct was not formally articulated, it became an informal rule, a socialisation practice and tradition that is used to coordinate repeated SME business interactions. By unanimously agreeing and verbalising (Hardcastle et al., 2005; Rai et al., 2009) that mobile technology use in

business is an acceptable behaviour, SMEs consciously produce and reproduce structures of legitimation. 'Mobile technology use', therefore, is a norm which provides the means, techniques or generalisable procedures SMEs use in a situated action context to conduct their business functions (Sydow & Windeler, 1998; Jones & Karsten, 2008). As a norm, mobile technology use associated practices which define boundaries of expected practice. These practices include the mobility benefits to business transactions, such as ability of employees to work at any location (whether in office or not) and where face-to-face meetings are deemed not always necessary; usage of employee's personal mobile phone for business activities; and provision of employees with airtime credits for their personal phones to enable marketing and other activities of the business. When a rule is institutionalised, such as mobile technology use, agents associate the rule with certain behaviors which are right or wrong, legitimate or illegitimate and if right or legitimate, such behaviour becomes accompanied by rewards, otherwise accompanied by sanctions (Hardcastle et al., 2005; Rai et al., 2009). SME employees indicated that practices associated with mobile technology use, such as providing financial support for the organisational use of employee's personal mobile phones, is considered as an acceptable behaviour although not formalised. The airtime quota that management provides employees, therefore, defines the boundaries of expected practice of employee's use of the mobile phone so as to avoid sanction; and social order in terms of 'how to go about from day-to-day (Giddens, 1984; Hardcastle et al., 2006). Employees who 'finished their quota before lunchtime without making it last the entire business day were sanctioned' and 'labelled as bad managers….none of us wants to be called a bad manager you know – we need our jobs' (SME_{33}). To avoid sanctioning, employees used their personal airtime quota for organisational work and, in so doing, reaffirmed the rules set by management. Employees perceived themselves powerless and thereby opted to reaffirm the rules so as to avoid sanctions by confirming to the acceptable behavior of utilising organisational airtime quota throughout the entire business day even though it included the use of the personal quota. In doing so, such employees reinforce the reproduction of structures of legitimisation (Lyytinen & Ngwenyama, 1992; Crowston et al., 2001, Chu & Smithson, 2003).

8.4.2 Socio-cultural norms as a structure of legitimation that is produced and reproduced by SME agents

Socio-cultural norms such as bargaining, mistrusts, language barrier and dependency syndrome were perceived to hamper web-based E-Commerce. Bargaining as a norm was regarded as an important element of making a transaction in Tanzanian business as SME9 indicates: 'you must remember that our people have a bargaining system on everything…its just normal'. This normality and continuous reaffirming of such a rule through social interaction is a means of SMEs' production and reproduction of structures of legitimisation. These findings resonate with those of Salacuse (1998; 2004) who found that some cultures tend to give more time and effort to negotiate preliminaries in attempts to build a good business relationship. This study's findings suggest that the more knowledgeable one is of the product and the more artful one is in the Swahili language, the more one can use these factors as bargaining instruments to extract a good deal, such as a higher payment from the customer. Graham (1985) and Tse et al. (1994) indicate that although people use different approaches during bargaining such as communication styles, persuasion strategies and protocols followed, there are substantial differences in bargaining style across cultures. This is because 'culture profoundly influences how people think, communicate, and behave. It also affects the kinds of transactions they make and the way they negotiate them' (Salacuse, 2004). In this study it was noted that the perception that the seller has of the consumer has an effect on the bargaining process. For example, a European consumer and a local consumer would both face a different starting price for the bargaining process; indicating that such cultural differences which cause these perceptions in the bargaining process could become potential sources for friction and misunderstanding between bargainers. In addition, a local consumer in a suit, arriving in a motor vehicle, speaking Swahili with an unfamiliar accent such as a Tanzanian who has been abroad and came back, and a local consumer on foot without a suit, would both receive different starting prices. Depending on what the SME sees and hears, a perception is created and a bargaining price set. A boundary is also defined for how low the price can be bargained for, with each consumer category. These rules of categorising customers are not documented, but have been enacted and reinforced to create structures of legitimisation – defining at what price a product or service can be rendered to a given customer category. By deviating from these rules, say by selling

products at the same standard price to all consumers without bargaining, the seller could fall into a loss because consumers would sanction his business by moving to where they can bargain the price. Therefore bargaining as a norm has been reinforced and legitimised to become part and parcel of how SMEs do business, specifically with the individual consumer. However, because bargaining requires a personal interaction and the development of rapport between the seller and buyer, it is regarded as a hindrance to web-based E-Commerce adoption.

Mistrust was also a socio-cultural norm that hindered web-based E-Commerce. Mistrust was associated with practices of corruption and bureaucracy, lack of business ethics and consumer's preference for refurbished and second hand products which had become more popular compared with new innovative products, especially in the ICT industry. SME_2 elaborates:

> if you rely on quality you lose out because government tenders are offered on a low price base and not quality. The society and our customers have a culture of purchasing low quality products because government itself buys cheap low quality products and now the public itself has developed that tendency.

This practice subsequently affects the adoption of E-Commerce because 'the sale of products online requires the sale of quality products that meets international standards - how can you do that here' (SME_9). SMEs indicated that they continuously faced corruption from consumers, the government, as well as their own employees to an extent that, 'instead of paying attention to learn and invest in ICTs, we spend most of the time investing in how to avoid corruption process' (SME_2). Corruption and bureaucracy were regarded as a norm and though a frustrating practice, it was not questionable 'because you either play along with or get out of the queue -this happens in almost every area' (SME_6). This behavioural practice impedes the adoption of E-Commerce because SMEs who resort to investing in E-Commerce are now faced with investing in means of avoiding corruption. Further, the cultural use of local language was a social barrier to E-Commerce use because typically the business transactions were conducted init.. In addition, the practice of a cash basis system was the norm because business transactions were considered risky due to a lack of identification systems such as identity documents and traceable addresses. The lack of trust, caused partially by the lack of traceable addresses,

had made the cash-based system turn into an accepted mode of transaction and become institutionalised as the norm. However, the cash system means that when the SME is to become a customer to another SME or any other organisation for larger quantities, the cash system is a hindrance. Thus although paying cash is a norm that reduced risks, it is also a constraint that limits SMEs' purchasing power unless there has been an understanding between the buying and selling organisations. This hindrance, together with the culture of mistrust, discourages the adoption of E-Commerce. These practices established by the social realm of Tanzanian society and interpreted and verbalised by SMEs to define whether the behaviour of online transactions is acceptable in the Tanzanian market. For example, the social practice of bargaining and buying of second-hand products would sanction attempts of online transactions because such transactions do not confirm to the appropriate procedures of how a transaction is conducted in Tanzania.

8.4.3 Static and interactive websites as a structure of legitimation that is produced and reproduced by SME agents

A norm that was specific to SMEs at the initial and institutionalised maturity level was the minimal use of websites for advertising/marketing and order entry purposes even though a website was associated with a positive image, symbolising social status. Having a website was perceived as customary, as it showed a level of sophistication regardless of whether the website was in use or not. SMEs that did not have a website were put under pressure to have one, 'even though they have no idea on how they will get their benefits' (GOV_1). Even though websites presented minimal benefits, SMEs reinforced and sustained the practice of using them. The website, therefore, became a normality which SMEs interpreted and verbalised as a guidance and code of social conduct for what social status and sophistication meant – a means of indicating an acceptable level of sophistication and social status. It became one of the concrete means SMEs used in a situated action context (Sydow & Windeler, 1998) to legitimatise their level of sophistication and social status. SMEs without a website became looked down upon whilst those with a website were perceived favourably by consumers.

8.4.4 Business resource as a structure of legitimatisation that is produced and reproduced by SME agents

A norm specific to SMEs at the institutionalised E-Commerce maturity level was the use of business resources, specifically partnerships with ICT foreign companies. As a result of environmental challenges such as lack of ICT expertise, continuous reliable electricity and the Internet, SMEs resorted to forming collaborative links with well-known ICT brands such as Microsoft, CISCO and IBM which were perceived to be trustworthy. The collaboration eased the challenges and gave such SMEs a trustworthy perception from trading partners because such foreign partners required SMEs to attend courses that provide training in an ICT vendor's product and sit a certification examination. SMEs that successfully became accredited and affiliated with large ICT brands became associated with dividing practices such as the use of desirable identities for example 'preferred partners and trusted advisors' (SME_9). The continuous perception attached to having partnerships standardised the need to form partnership and became a normality that was desired, specifically among SMEs in the ICT, and the tourism and entertainment industry. These SMEs continuously sought for the status of being 'trusted advisors' periodically by 'upgrade[ing] all the time, especially with the rapid changing in technology...we upgrade ourselves in these [ICT] training by going to R.S.A or Kenya and sitting for these online exams here' (SME_9). By engaging in these upgrades, SMEs continuously recreate recurrent practices of attending certification courses, and visiting business partners in their countries to acquire training, to become norms that have shaped the SMEs' actions, thereby producing and reproducing structures of legitimatisation. Such practices became the means of defining acceptable behaviour of the partnerships so as to avoid sanction (Giddens, 1984; Hardcastle et al., 2006); and as a means of attaining E-Commerce sophistication. The fear of not confirming to norms 'is likely to engage some sort of punishment from the referent group, directly or indirectly…because a norm is not a norm unless there is some form of sanction for its violation' (Prietula & Conway, 2009, 148). Such a sanctioning system designed to promote trustworthiness reduces the attractiveness of not being accredited or affiliated. SMEs without affiliation and accreditation became consciously and unconsciously ignored and subsequently sanctioned by consumers as being untrusted. By adhering to the same

practices of attending certification courses, that is enacting the same practices, SMEs build structures of legitimation.

8.5 Unintended consequences in interaction

Giddens (1979; 1984) details how unintended consequences are created from the instantiation of rules and resources. Such unintended consequences are unpredictable outcomes that would not have taken place if a social actor had acted differently but that are not what the actor had intended to happen by those initiating that pattern of behavior, (Giddens, 1979; 1984; Balogun & Johnson, 2005). The empirical evidence suggests that the unintended consequences resulted from the instantiation of rules and resources of mobile technology use. These unintended consequences include employee resentment towards organisational use of their personal mobile phones, mobile phones as a means of curbing Uswahili social practices and bureaucracy. Mobile device usage in organisations obtained full support from management and this outweighed that of desktop computers partly due to the minimal cost required to own a mobile as compared with a desktop; and partly due to mobile devices supporting most business activities that they would have wanted to do online. Although there was strong management support (financially) for mobile device usage in the organisation, employees felt the financial support for its usage was limited and not formalised, with no clear policies relating to the process. This is an indication of an unintended consequence that would not have taken place if SME owners had acted differently by placing procedures in places regarding the use of employee's mobile phones for work place. Employee resentments are not what SME owners had envisaged or intended to happen by initiating that pattern of behaviour (Giddens, 1979; 1984; Balogun & Johnson, 2005).

Another unintended consequence that resulted from the instantiation of rules and resources of mobile technology use was the use of mobile phones as a means of curbing social cultural practices that hindered E-Commerce. For example, with the advent of mobile phones, employees were faced with 'unnecessary pressure – the other party can call you at any time to check if you have finished or even started the job whereas

previously he would have to physically come him/herself….it's almost as if you are being monitored' (SME_1). These sentiments were collaborated by an employee from SME_{28}:

> because we are in the money industry, management can call me even four times a day to check – it's annoying. Prior to the phones, it was only if they were in the office that they would ask, which they hardly were, and then I would have had the whole day to do it… you know how we waSwahili work my friend. But with these phones, dah! Things have changed… with the first phone call from my managers….I start the job before they get annoyed.

This is an illustration that the communicative ability of mobile devices has resulted in people being slightly more time conscious, organised, and cognisant of deadlines. These unforeseen benefits of mobile phones are adding to SMEs' perception of findings web based E-Commerce adoption and institutionalisation unattractive. Mobile technology use also provided privileges to SMEs that were conducting business with government officials These SMEs can easily call their government partners when they encounter corruption and bureaucracy at the hands of other government officials, who either purposefully or ignorantly misinterpreted any of the policies or rules. Whilst some SMEs were aware of government officials who could assist when confronted with problems, others are unaware of these developments – a sign that there is differential distribution of knowledge and resources in the social system. For those who were positioned favourably with government official, the mobile devices made it possible for them to act as whistleblowers in attempt to right a wrongdoing, thereby giving them the power to effect change. These unintended consequences subsequently react on that SME practice, causing a feedback loops that condition social reproduction, and implicate transformations and in so doing fundamentally determine the process of structuration through which systems are maintained and changed over time (Boudon,1982; Giddens, 1982; Knorr-Cetina, 1981).

8.6 Discussion

Giddens (1976) defines the concept of structure as generative rules and resources which individual members draw upon in their interactions. As resources, SMEs in this study draw upon websites, mobile technology, business resources, management support,

industry support from mobile vendors, outsourcing, and social networking forums, in their interactions to acquire power (Ogden & Rose, 2005). By applying these rules and resources, that is by instantiating them, SMEs transform interaction sequences and, consequently, contribute to structures of domination (Willmott, 1981; Crowston et al., 2001). The more an SME is aware of these resources, the more capacity tit has in exercising its power, and is able to make a difference (Kort & Gharbi, 2011; Sarasona et al., 2006). When SMEs are able to exploit resources present in their context (Rai et al., 2009), they contribute to the production and reproduction of structures of domination. SMEs' use of these resources is legitimatised by norms of mobile technology use for business communication and transactive purposes; socio-cultural norms such as bargaining, mistrusts, language barrier and dependency syndrome established by SMEs and the social environment; minimal use of websites established by initial adopters and those that had institutionalised E-Commerce; and business resource use established by SMEs that had institutionalised E-Commerce. These norms which have been interpreted and verbalised (Hardcastle et al., 2005, Rai et al., 2009), and reinforced through social interaction and environmental constrains (Orlikowski, 1992) of a lack of institutional e-Readiness for E-Commerce, industrial support, market e-Readiness for E-Commerce, and socio-cultural e-Readiness for E-Commerce became the legitimate way to conduct E-Commerce in Tanzania so as to avoid possible sanctions. The more an SME is aware of these norms and reaffirms them to avoid sanction, the more that SME contributes to the production and reproduction of structures of legitimatisation. These norms become institutionalised with time and meanings become attached to form rules upon which SMEs draw upon in their interactions. For example, SMEs' association of E-Commerce with the minimal use of websites and maximum use of mobile technology is instantiated when management made a conscious decision to not financially support website use (for example provide ICT expertise training and the necessary technological resources), but choose to provide financial support for mobile technology. Although the website is part of most SMEs' strategy for conveying information about their existence, it does not form its core component. The use of both technologies (website and mobile), enabled SME owners to fulfill their needs in a manner that O'Reilly (2005) and McAfee (2006) explained, as referenced by Pentland & Feldman (2007), that 'the potential significance of new ICTs arises not just from their individual function, but from their potential for recombination'

and this combination is a practice that should be understood from the Tanzanian context because 'practice is embedded in its context of occurrence' (Lave, 1988; Suchman, 1987 as referenced by Vaast & Wlasham, 2005). We also find that the routinised nature of SMEs' limited-use practice of website (Figure 25) is well explained by structuration (Giddens, 1984) as a theory of social order, in which the interaction between an SME 'and socially-produced structures occurs through recursively situated practices that form part of daily routines' (Jarzabkowski, 2004, 4). Management's lack of commitment towards websites and its commitment toward mobile technology conveys a powerful sign to the rest of the organisation about the importance placed on web-based E-Commerce (Chatterjee et al., 2002). The continuous use resulted in the frequent mobile use technology-in-practice as shown in Figure 26. Although mobile technology support was higher than website use, it was still perceived as minimal, as employees' personal mobile phones were used for the organisational work. Although this business model, of using employee's personal phone for business endeavours was not acceptable to employees, it did make business sense to SME owners because (i) SMEs are small with limited resources unable to afford to buy mobile phones for employees purely for work purposes; and (ii) SMEs operate in a culture of sharing, a culture where mobile phones are often divided or shared among people (Pfaff, 2010; James & Versteeg, 2007). Scott et al. (2004) indicate that 'the poor in Africa tend to use public access facilities and to share phones, so low teledensity figures can mask the extent to which the poor access telecommunications services'. Dholakia and Kshetri (2004) report on groups of small farmers in remote areas of Côte d'Ivoire who share mobile telephones so they can follow hourly fluctuations in coffee and cocoa prices. Attewell and Savill-Smith (2004) also found that 'many young adults share mobiles, perhaps among family members or with friends'. Thus sharing of mobile phones is one of the many ways of exhibiting a collectivist norm in LDCs and developing country societies (Sinha, 2005). The strong culture of sharing mobile phones is therefore a custom and Tanzanian SME owners have extended this culture into their business and by so doing have failed to see the negative consequences (unhappy employees) of sharing, but sees this as an opportunity to utilise the limited resources available. Managers fail to recognise that mobile devices are technology artefacts of which if used in a business need to be governed by rules just as any other artefact.

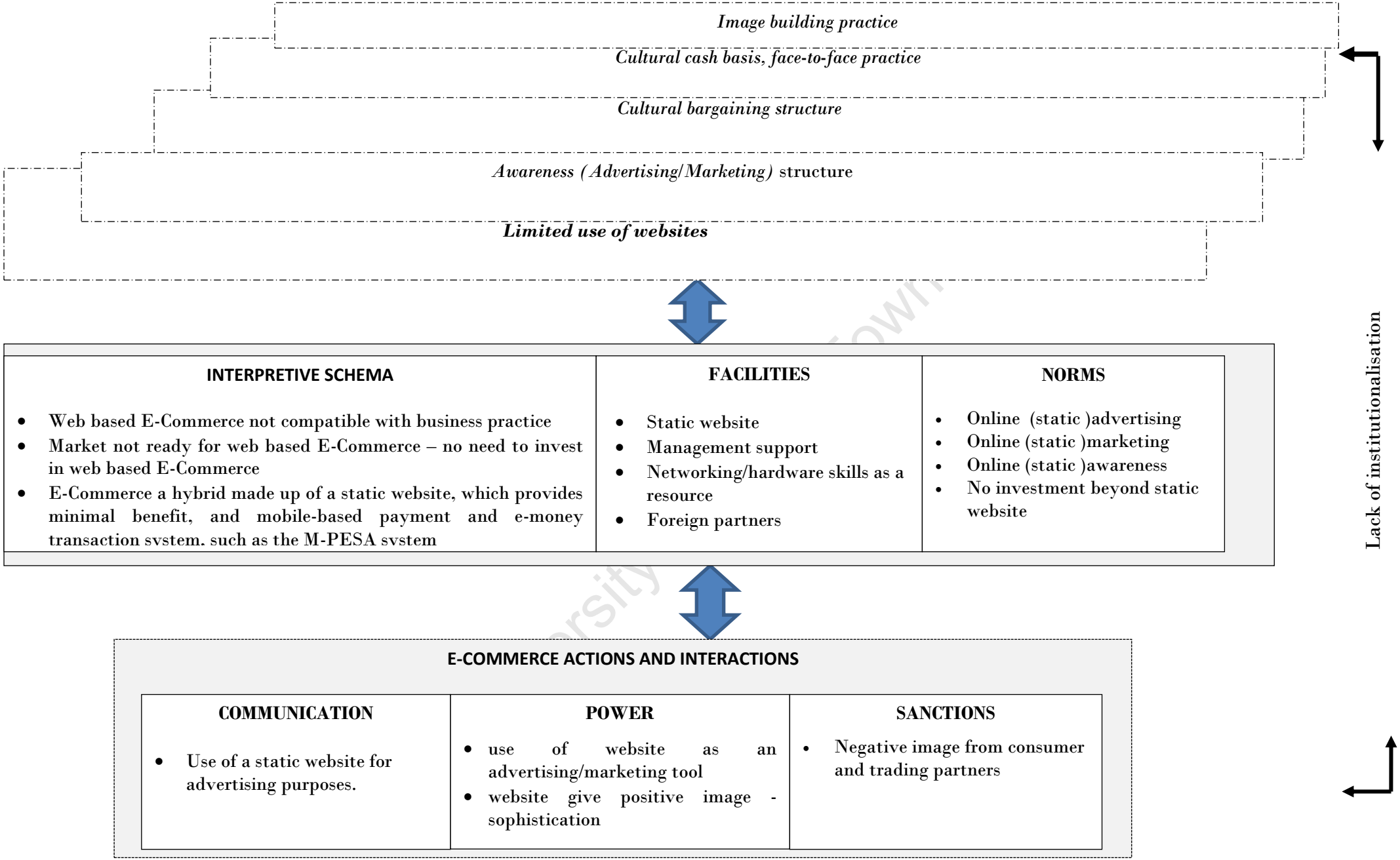


Figure 25: Limited-use technology-in-practice enacted by Tanzanian SMEs.

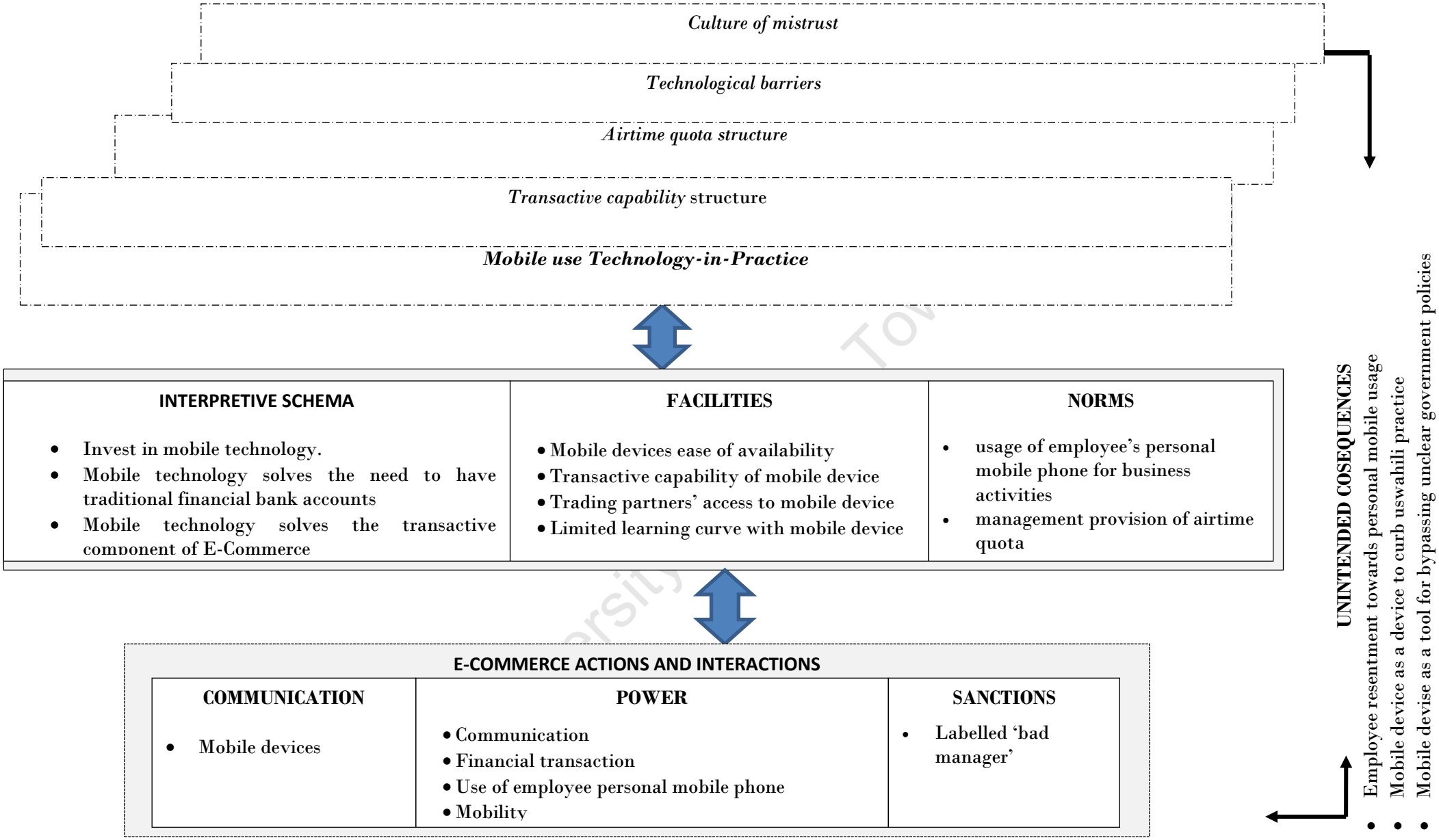


Figure 26: Frequent Mobile use Technology-in-Practice enacted by Tanzanian SMEs.

With formalised rules and procedures, there could be less resentment from employees as they would be thoroughly informed on what is expected of their mobile phones and the extent to which their devices have to be used in the business. A static and interactive websites, mobile technology use, business resources and SMEs' perceptions of the environmental have shaped how SMEs view E-Commerce and, consequently, have created a blue print from which SMEs' views E-Commerce and how they should behave towards its undertakings in Tanzania. These behaviours, communicated to each other via the establishment of business relationships with foreign ICT companies, the adoption of mobile technology, and the choice to downplay websites, became routinised eventually, and have determined how the social realities associated with E-Commerce come about (Brooks, 1997). There is considerable evidence of SMEs, specifically those in the ICT and the tourism and entertainment industries, enacting a partnerships problem-solving technology-in-practice approach as they draw upon their experienced technological and contextual challenges of a lack of ICT expertise, electricity, and bandwidth; partner's request to be accredited; and the general perception that certification is associated with quality and trustworthiness which ultimately builds a good image (Figure 27). SMEs' behaviour of enacting a partnership problem-solving practice is to be understood more adequately by reference to the overall structures of certification, the need to solve technological and contextual challenges, and the need to build a trustworthy perception. These behavioural practices contribute to the production and reproduction of structures of signification. Therefore SMEs use the blue print to understand what others are doing and make sense of the context they act in by drawing on structures of signification (Willmott, 1981;, Lyytinen & Ngwenyama, 1992; Sydow & Windeler, 1998). However, the interpretive schema is not static, but is continuously changing depending on the SMEs' ongoing situated knowledge. As SMEs become more knowledgeable about their context, the schema becomes repopulated or reproduced with new information. As such, structures of the Tanzanian E-Commerce system are created by SMEs' actions which constantly produce and reproduce structures of signification, domination and legitimation, which constrain and enable their use of E-Commerce. Subsequently the same reproduced structures, which are not static and definitive (Steinerowski & Steinerowska-Streb, 2012), determine the future actions (Orlikowski & Robey, 1991).

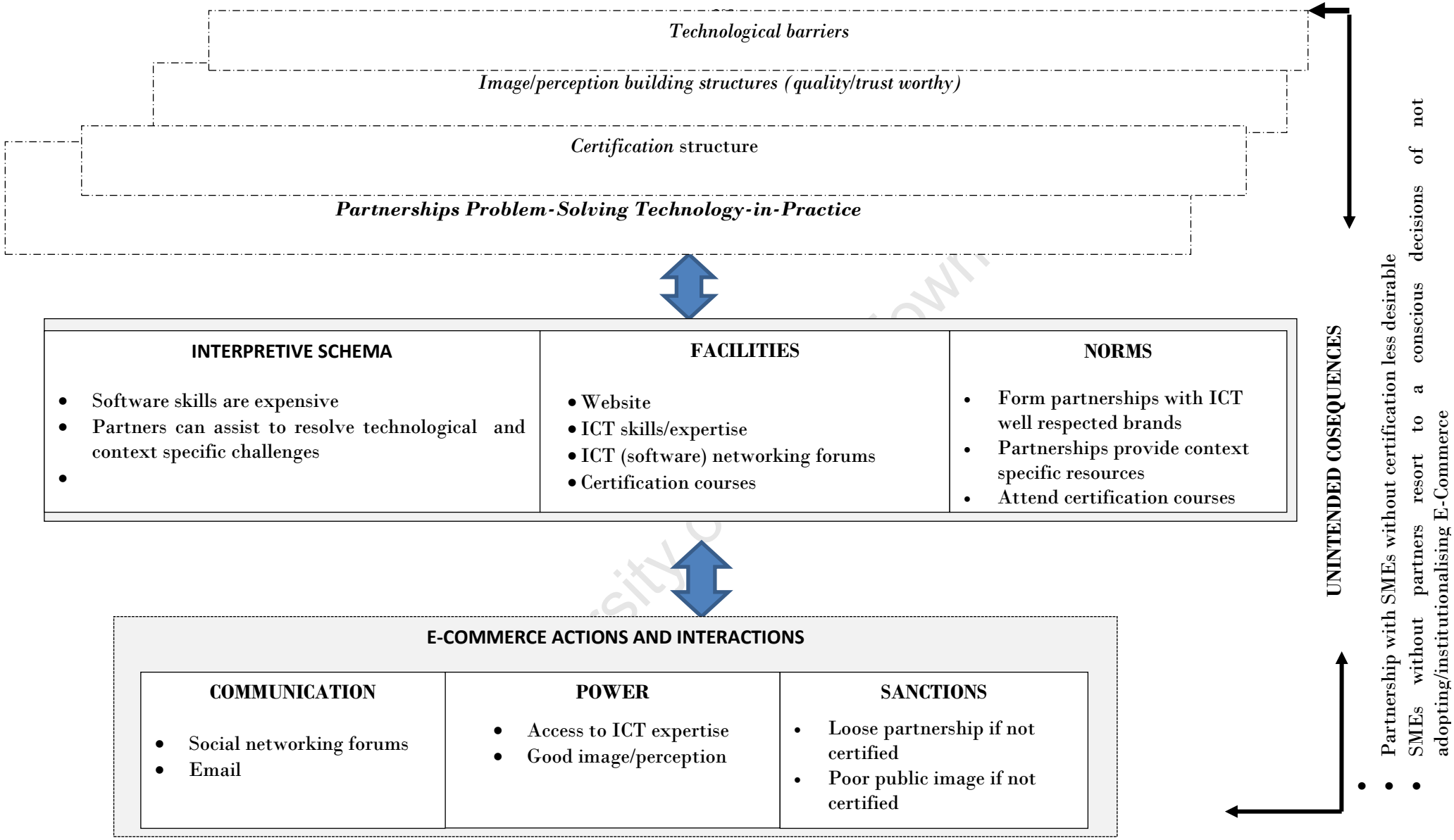


Figure 27: Partnerships Problem-Solving Technology-in-Practice enacted by Tanzanian SMEs

SMEs' actions have unconsciously created a business model that is a result of the structural conditions created by a lack of institutional e-Readiness for E-Commerce, industrial support, market e-Readiness for E-Commerce, and socio-cultural e-Readiness for E-Commerce; and enacted practices such as mobile use and minimal use of websites. The business model is a combination of a mobile platform and wired E-Commerce that provides Web 2.0 services, specifically social networking and allows SMEs to harness the benefits of an advertising E-Commerce model. An SME's' ability to create value from this business model is not in how well it is able to draw and retain customers (to its website as the popular belief of wired E-Commerce), but is a function of how efficient its business model is in (i) achieving its mission to expand its market share, increase revenue and create value for all parties involved in the transactions using mobile technology and (ii) using the Internet for collaboration purposes with ICT experts and partners through social networking forums. The SME's value proposition is therefore the product or service information provided via the website, and the information exchange that occurs between SME and trading partners via mobile technology (such as short messaging services (SMS) and mobile financial services) or wired technology, such as email. There have not been many business models for the mobile Internet or a combination of both Internet and mobile. Leem et al. (2004) propose a mobile business model classification scheme which does support observations in this study. Their model indicates that mobile business is categorised in two main streams of B2C and B2B. The B2C model is subdivided into a commerce model that provides mobile content and/or services such as MP3, games, books or community forums for direct commercial transactions; an intermediary model which delivers mobile contents and or services such as stock related sites or news and weather information from other sources to customers; and an information model which provides personalised information to customers' mobile terminals such as short text messaging, coupons or banners. From a B2C perspective, the Information model supports findings of this study in which SMEs use mobile devices to send and receive information to customers concerning price confirmation and delivery information. The Mobile B2B/B2E model is based on a value chain perspective namely firm infrastructure for mobile solutions supporting the firm's general decision making and information sharing; and the other primary activities of the value chain. Findings from this study show that in each of the

value chain activities, the mobile device was used to communicate with trading partners so as to keep them informed of the status quo of their request.

8.7 Conclusion

This chapter presented empirical findings about E-Commerce in Tanzania in relation to the theoretical lens of structuration theory. Specifically, the chapter discussed the findings in light of structuration theory to understand the guiding structures within which E-Commerce meanings are formed, and the process of this meaning formation which leads to various behaviours and understanding. It revealed the enacted practices in perspective of structures of signification, domination and legitimation.

The findings in this study specifically indicate that while it is true that E-Commerce creates opportunities for SMEs to be effectively involved in global markets, and show that SME respondents were not able to take full advantage of the potential opportunities of traditional E-Commerce unless they merge this approach with mobile commerce. They view E-Commerce as merely having a static web presence that acts as a marketing instrument of the organisation; and the significant use of the mobile device. E-Commerce thus do not necessarily translate to the buying and selling of products online, but it is the provision of information about the organisation and its products and services online, and the use of this information to buy and sell products using the mobile phone. Websites are thus used for information purposes and they have become a norm for each organisation as it is associated with a positive image and thus is a necessity to avoid possible sanctions. Considerable evidence is found of SMEs enacting the use of websites through a limited-use practice as they draw upon their understanding of websites being incompatible with Tanzanian cultural bargaining system, cash basis and face to face; and as a platform from which they can continue to build a sophisticated image and advertise/market their products. Also found is that the behaviour of SMEs in order to have limited-use practice of websites, should be understood more adequately with reference to the overall structures of bargaining, cash basis and face-to-face transactions imposed for successful trading in Tanzania. Findings also point to technological challenges which SMEs face from the environment, mainly from a lack of supporting industry and institutional support. It is also found that E-Commerce adoption is highly affected by the presence of a

supporting industry, specifically partnership with organisations that can support SMEs to overcome technological challenges and expertise. However, partnership with large ICT organisations required stringent regulations, such as the SMEs' being affiliated with them by acquiring certification courses. It is found, then, that the behaviour of SMEs with a partnership's problem-solving practice should be understood more adequately by reference to the overall structures of certification, the need to solve technological and contextual challenges, and the need to build a trustworthy perception.

The limited-use practice of websites resonate with Orlikowski's (2000) findings in her study of the adoption of groupware and point to the fact that SMEs have no intentions to institutionalise E-Commerce because new practices of using mobile communication and mobile payment systems mitigate against the need for institutionalisation that would require full reliance on websites. Although there is a recurrent mobile use practice, SME's owners do not yet perceive the mobile device as an organisational resource they should invest in. They do, however, still consider it acceptable to use their employees' 'personal' phone. This has caused an undisclosed rift between employees and owners. This unanticipated and undesirable consequence undermines employees, leading to low morale. Considerable evidence has been found of SMEs enacting the frequent mobile use technology-in-practice, as they draw upon their understanding of mobile technology's ability to offer transactive capability, mobility and communication, and to limit mistrusts. It was also established that the behaviour of SME employees – their unhappiness with the organisation's use of their personal phones, should now be understood by reference to the overall structure of airtime quotas imposed for communication and transaction capabilities with trading partners and customers. The structures of E-Commerce use that SMEs enact when engaging with it are the encoding of SMEs' idiosyncratic history and organisational experiences, institutional and industry perceptions and affiliations which SMEs use to arrive at a shared understanding of E-Commerce in Tanzania.

CHAPTER 9: EVALUATION

9.1 Introduction

This purpose of this chapter is to evaluate the conduct of the study. The evaluation is based in the first instance on the set of principles for conducting and evaluating interpretive field studies that Klein and Myers devised in 1999. The motivation of using these principles is because this study is primarily interpretive in nature and the guiding assumptions are that our knowledge of reality, including the domain of human action, is a social construction by human actors from which theories concerning reality are formed to make sense of the world (Walsham, 2006). Although Klein and Myers's principles were not intended to become a checklist for interpretive researchers, they however do present a more 'comprehensive approach to methodological justification of interpretive field studies in IS…and it is valuable for IS researchers to think about their own work in relation to the Klein/Myers …criteria' (Walsham, 2006, 326). These principles present a means of evaluating the quality of interpretive research in IS (O'hEocha et al 2012) and as such are seens as a 'significant contribution to the topic of quality and validity criteria for interpretive research in IS field' (Cardoso & Ramos, 2012, 77). In the second instance the study was assessed using the key features of structuration theory, their implications, and the potential issues that impinge upon problems of empirical research in the field of IS. This is motivated by the nature of the 'complex and abstract character of structuration and its lack of direct empirical implications', which makes its contribution to IS research not a straightforward one (Jones & Karsten, 2008).

The rest of this chapter is organised as follows: Section 9.2 uses Klein and Myers's (1999) principles for conducting and evaluating interpretive field studies. Section 9.3 uses key features of structuration theory to evaluate those of its aspects that impinge most generally upon problems of empirical research in the social sciences and consequently potential implications for Information Systems research. Section 9.4 summarises the chapter and Section 9.5 concludes it.

9.2 Klein and Myers's principles for conducting and evaluating interpretive studies

This section uses the seven principles to evaluate the conduct of this study, as shown in Figure 28. It commences with the first principle of the hermeneutic circle and concludes with the last principle of suspicion.

Principle	Explanation
Principle of the Hermeneutic Circle	This principle suggests that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form. This principle of human understanding is fundamental to all the other principles.
Principle of Contextualization	Requires critical reflection of the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged
Principle of Interaction Between the Researchers and the Subjects	Requires critical reflection on how the research materials (or "data") were socially constructed through the interaction between the researchers and participants.
Principle of Abstraction and Generalization	Requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical, general concepts that describe the nature of human understanding and social action
Principle of Dialogical Reasoning	Requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings ("the story which the data tell") with subsequent cycles of revision
Principle of Multiple Interpretations	Requires sensitivity to possible differences in interpretations among the participants as are typically expressed in multiple narratives or stories of the same sequence of events under study. Similar to multiple witness accounts even if all tell it as they saw it.
Principle of Suspicion	Requires sensitivity to possible "biases" and systematic "distortions" in the narratives collected from the participants

Figure 28: Summary of principles for interpretive field research (Klein & Myers, 1999, 73)

9.2.1 The principle of the hermeneutic circle

The principle of the hermeneutic circle suggests that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form. The understanding of a complex phenomenon comes from the 'preconceptions about the meanings of its parts and their interrelationships' (Klein & Myers, 1999, 71).

In this study, the researcher's understanding, based on the literature, of the E-Commerce phenomena in Tanzania constituted the part, whilst the whole consists of the shared meanings that emerge from the interactions between the researcher and SME respondents, resulting in a shared understanding of the subject matter. The researcher

who represents the part had preconceived ideas based on the literature that E-Commerce as a subset of electronic business provides the capability of buying and selling products and information on the Internet and other online services (Mahadevan, 2000; Boateng et al., 2008; Ngai & Wat, 2002; Kalakota & Whinston, 1997); the application of technology toward the automation of business transactions and workflow; the delivery of information, products/services, or payments via telephone lines, computer networks, or any other means. All of these are but tools that address the desire of firms, consumers, and management to cut service costs while improving the quality of goods and increasing the speed of service delivery. Further preconceived ideas were that in Tanzania E-Commerce is at a very initial stage of adoption due to challenges of organisational and environmental factors. It was expected that the lack of organisational technical resources would be the main challenges to the adoption and institutionalisation of E-Commerce.

An initial quantitative engagement with SMEs show that it was environmental factors in the main that affected E-Commerce, followed by organisational factors. Although this engagement reaffirmed the researcher's prior preconceived ideas that E-Commerce in Tanzania is at the very initial adoption stage, it also showed that E-Commerce as a technology was not seen to be a challenge. It was, however, the necessary readiness of the environment, and management's support that were at issue. A follow-up engagement with the SMEs that participated in the main part of the study revealed that their understanding of E-Commerce is that of its being a hybrid – a mix of static website and mobile payment transactional capability. This perception of E-Commerce became the shared understanding between SMEs, leading them to be in the best position to offer a context specific opinion and offer an underlying coherence about E-Commerce adoption in Tanzania.

9.2.2 The principle of contextualisation

The principle of contextualisation 'requires critical reflection of the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged' (Klein & Myers, 1999, 73), and can account for the grossly uneven processes of IS innovation in a global context (Walsham, 2001; Avgerou,

2002, as referenced by McGrath, 2005). In the implementation of this study the context in which the participants reside and the phenomenon exists was thoroughly investigated. The context in which E-Commerce exists is characterised by a very limited Internet penetration of 1.3 users per 100 inhabitants in the year 2008, and an estimated 4.8 Million users by the year 2010 (ITU, 2009). Internet services are still very expensive because of a lack of 'cheap and high-capacity connections to the global Internet' (Tanzania Ministry of Communications and Transport, 2003, 3) and affordable accessibility is still via Internet cafés. There exists, however, a rapid adoption of mobile technology which has far outreached fixed telephone lines by 100 per cent in the year 2009. This has made mobile phones the most convenient method of communication in business. Other historical factors about the context is that the country has 'excessive donor dependency and increased economic imbalances between the haves and have nots' (tznews, 2007); and increased foreign borrowing, which did not improve the economy significantly while increasing indebtedness (Mhina, 2000).

The high cost of Internet and its accessibility was a challenge for most businesses and was experienced by the researcher. For example, the researcher anticipated relying on email communication to produce quantitative results. Although the research instrument was emailed to SMEs, contextual challenges of ICT resources and perceptions of email communication proved to be hindrances. Email communication was rarely used and email addresses on the websites of most SMEs were not active. As a result, the response rate was negligible. A second attempt was made, with the researcher having to go to the SMEs' site and distribute the questionnaires. However, SMEs' lack of understanding of E-Commerce and ICT-related terms required the researcher to some extent to be involved at the data-gathering site. This example illustrates how context, characterised by minimal email communication use, bandwidth issues, and websites that do not have updated information, necessitated the direct involvement of the researcher. During face-to-face interviews, the researcher was able to observe and experience some of the infrastructural and cultural practices that act as hindrances to E-Commerce adoption and institutionalisation. For example, the researcher continually experienced challenges related to physical infrastructure, specifically transportation, which made time-keeping a problem for the interview schedule. Another contextualisation issue related to social and cultural practices. For example, an interview schedule usually started with the researcher

notifying the SME that this is a research endeavour and that all ethics protocols, which are explained, would be observed. Some SMEs, however, asked for an immediate monetary benefit. In an attempt to understand why an SME would associate research with monetary value, the researcher narrated this fact to one of the survey's participants at a tertiary institution. The participant did not find the practice unusual, and was surprised by the researcher's response. This, he said, was normal behaviour that has been shaped by Tanzania's corruptive social context. The researcher's experiences and those narrated by the staff at the tertiary institution were corroborated by the government representatives for SMEs (GOV_1).

9.2.3 The principle of interaction between the researchers and the subjects

The principle of interaction between the researcher and the subjects/participants requires critical reflection on how the research materials were socially constructed through this interaction (Klein & Myers, 1999). This interaction was amply demonstrated throughout – this study from the quantitative preliminary data gathering to the qualitative data gathering. In the quantitative pilot study, the researcher used email communication to initiate communication. When this was deemed not to be an ideal method in terms of the context in which SMEs were embedded, the researcher devised an alternative method of interaction – that of physically being at the site to administer the questionnaire. Once the data was gathered the researcher performed a pre-analysis to ensure that SMEs had provided the correct data before the research sites were exited. Clarification of what SMEs provided was done using two methods: by the researcher visiting the SMEs or via mobile communication. The results showed that an interaction with SMEs was mainly supported via mobile communication and face-to-face. Email communication interaction was used as the last resort with most SMEs not in the ICT industry or tourism industry unable to use this method of communication.

9.2.4 The principle of abstraction and generalisation

The principle of abstraction and generalisation requires relating the idiographic details revealed by the data interpretation through the application of principles one and two to theoretical and general concepts that describe the nature of human understanding and social action (Klein & Myers, 1999). Abstraction emphasises the process of removing one or more details or properties of a complex object to simplify and focus attention so as to attend to others (Kramer, 2007). Generalisation

> among other things, refers to the validity of a theory in a setting different from the one where it was empirically tested and confirmed because the generalizability of an IS theory to different settings is important not only for purposes of basic research, but also for purposes of managing and solving problems that corporations and other organizations experience in society (Lee & Baskerville, 2003, 221).

By using three different approaches to understanding E-Commerce in Tanzania, the study in each phase provided for abstraction. In the quantitative study, the theoretical framework was not considered although the empirical findings form as a preliminary understanding of E-Commerce in Tanzania. The purpose was to understand E-Commerce from the E-Commerce literature without the complexity of an underpinning theoretical lens of structuration theory. The removal of the theoretical lens from the initial pilot study allowed for a focus on contextual and structural factors that affect E-Commerce adoption in Tanzania without the need to understand how the context produced structural practices that have become norms taken for granted s and in so doing, catered for the abstraction principle of Klein and Myers (1999). The pilot results are then integrated with the qualitative study (thematic and critical analysis) to yield a general understanding that (i) Tanzanian SME's on-going situated E-Commerce knowledge (of a static website, mobile technology use, business and technical skills availability, taking advantage of partnerships with foreign companies, attendance of certification courses, and use of social networking forums) is used in their interactions with themselves and trading partners to make sense of their and other's communicative actions of intending to or failing to either adopt and institutionalise E-Commerce; (ii) that SMEs which are aware of this knowledge are in a better position to acquire individual power by exploiting

available resources to subsequently affect each other's conduct ;(iii) whilst drawing upon the values and conventions of their organisation, and on external rules, to create E-Commerce sanction rules; and that (iv) rise to an unintended consequence which reaffirms existing E-Commerce structures or creates new ones. The processes of arriving at this common understanding fulfil the generalisability principle which describes a 'general concept formed by extracting common features from specific examples' (Kramer, 2007, 2).

9.2.5 The principle of dialogical reasoning

The principle of dialogical reasoning 'requires sensitivity to possible contradictions between the theoretical preconceptions guiding the research design and actual findings ("the story which the data tell") with subsequent cycles of revision' (Klein & Myers, 1999, 76). The physical engagement with participants, specifically the quantitative questionnaire and interviews, were focused at arriving at an understanding of the researcher's preconceived ideas and the actual Tanzanian SME social context. The three months the researcher spent in the field allowed for dialogical process that helped in solving most contradictions, specifically in how E-Commerce is conceptualised in the LDC context of Tanzania. For example, the researcher expected that the more aware the SME's owner is of the use and benefits of E-Commerce, the easier it is for him/her to intend to adopt and institutionalise the technology. This understanding is based on the fact that adoption is influenced by, among other things, the owner's characteristics such as knowledge and experience (Cloete, 2002); and that the personal characteristics of individual actors modulate the acceptance and implementation of innovations (Kyobe, 2008). Results from this study demonstrate that this preconceived understanding clearly contradicts the reality. In the first quantitative study, SMEs indicated a high awareness of the potential benefits of E-Commerce. Yet in the interviews sessions they positively indicated that they had no intention to institutionalise E-Commerce due to the influence of contextual factors. This dialogical reasoning allowed for the 'inherent prejudices of the researcher to be recognised and used to improve understanding through the interpretation process' (Stockdale & Standing, 2006) and, in so doing, facilitated the 'emergence of new

insights, which eventually coalesced into a set of coherent themes that were linked with, but not constrained by, prior theoretical frameworks' (Pawlowski & Robey, 2004, 652). The researcher became dialogically aware of social realities by being an active participant in a reflexive process of understanding the E-Commerce phenomenon in Tanzania from a SME's perspective.

9.2.6 The principle of multiple interpretations

The principle of multiple interpretations 'requires sensitivity to possible differences in interpretations among the participants as are typically expressed in multiple narratives or stories of the same sequence of events under study' (Klein & Myers, 1999). The use of a quantitative pilot study provided for a preliminary understanding of factors that affect E-Commerce in Tanzania. The results served as guide for the interview process. The interview sessions were seen by the researcher as an interaction process from which there emerged a shared understanding E-Commerce, as constructed from both the researcher's and SME's interpretations. The use of validity claims and content analysis offered triangulation advantages to ensure that the data presented by SMEs is not only verified but also that the interpretations of the researcher are in accordance with the social context. The use of these multiple methods for data collection and analysis was to improve the integrity of the results of the findings. For example, multiple interpretations of the social factor of 'dependency syndrome' associated with E-Commerce are found. Whilst the 'experts', such as the United Nations or foreign immigrants, formulated their understanding of dependency syndrome based on the context of public discourse about least developed countries and their inability to come out of poverty, the government and native African SMEs' owners formulate their understanding based on the contextualisation of the term. That is, the 'experts' and those not within the cultural setting, see it as a dependency syndrome whilst locals see it to be a natural cultural means of relying on each other. It is the researcher's belief that the dependency syndrome should be a feature of the participant's discourse and so the context-dependent nature should be borne in mind (Talja, 1999). By limiting the research to the understanding of the public discourse of the dependency syndrome, the danger of missing the authentic meaning from the native African SMEs' owners' cultural logic arises.

Another case of multiple interpretations occurs in the conceptualisation of E-Commerce. The findings show that the view of E-Commerce as both a static website and as in the use of mobile phone is the general shared understanding as to the practices of SMEs' business endeavours. It is, however, also viewed differently by each of them, depending on the industry. For example, in the insurance industry, the use of a website was not imperative and therefore an understanding of E-Commerce was purely mobile-oriented, but in the tourism and entertainment and the ICT industry, E-Commerce was viewed strictly as the use of both a static website and mobile phone. These cases of multiple interpretations depict that the study fulfilled the principle of multiple interpretations.

9.2.7 The principle of suspicion

The principle of suspicious 'requires sensitivity to possible "biases" and systematic "distortions" in the narratives collected from the participants' (Klein & Myers, 1999, 84). In this study, the principle of suspicious was executed by the use of CDA which calls for one to be suspicious of technology and respondent's reports (Frank, 2006). Third party stakeholders were interviewed, including those from government and trading partners like the banking sector so as to triangulate SMEs' perceptions of factors that affect E-Commerce adoption and institutionalisation. For example, all SMEs were keen on the use of mobile technology in their organisation. They were, however, not keen to allow their employees to be interviewed. This was suspiciously observed by the researcher. In respect of the few SMEs that did grant the researcher access to their employees it was noted that although the use of mobile technology was perceived as a solution to E-Commerce transactive capabilities, the unintended consequences of using employees' personal mobile phones was that this act was not appreciated. These suspicions call for the observation of power relations that restrict employees' freedom of expression as to the use of their mobile phone. This, then reveals SME owners' intentions to meet his/her 'unquestioned social ends', as being, as Avgerou (2005, 108) suggests, as having a 'dubious political and moral status'.

9.3 Structuration theory concepts

Structuration theory has been regarded as a complex abstract theory, with a lack of direct empirical implications (Jones & Karsten, 2008). These characteristics make its contribution to IS research not straightforward. Some key features of structuration theory, their implications, and consequent potential issues for IS research have been summarised by Jones and Karsten (2008, 137) in Figure 29.

Feature of Structuration Theory	Implication	Potential Issues
Rejection of both positivism and strong interpretativism	Structure does not determine action, but nor is action independent of structure	Universal social laws are markedly implausible, but accounts based solely on individual action and meaning are also inadequate
Duality of structure	Structure and agency are mutually constitutive	Structure is inseparable from agency
Structure is a "virtual order of transformative relations"	Rules and resources exist only in their instantiation and as memory traces orienting conduct	Material resources, such as technology, influence social practices only through their incorporation in processes of structuration
Agents always have the possibility to do otherwise	Structural constraint simply places limits upon the feasible range of options open to an actor in a given circumstance	Agents comply with structural constraints because they choose, rather than are forced, to do so
Agents are knowledgeable about their actions and continuously reflect on their conduct	Agents are not passive objects, subject to exogenous forces, or ignorant of the influences on their actions	People, including researchers, should be considered as active, reflexive participants in the practices in which they engage
Unacknowledged conditions and unintended consequences	Production and reproduction of society is not wholly intended or comprehended by social actors	Social generalizations are necessarily contextual
Essential recursiveness of social life	Society is a complex of recurrent practices that constitute social institutions (and individual identity)	Individual action needs to be understood in its ongoing relationship with large-scale social organization
Time space distanciation	Societies "stretch" over spans of time and space	Information technologies may be able to facilitate some level of social integration "at a distance"

Figure 29: Some key features of structuration theory, their implications, and some potential issues for IS research

9.3.1 Rejection of both positivism and strong interpretivism

Structuration theory, as proposed by Giddens, rejects the traditional dualistic views that see social phenomena as determined either by objective social structures, which are properties of society as a whole, or by autonomous human agents. An objective that is solely positivistic tended to be 'strong on structure, but weak on action' (1993, 4), seeing human agents as inert and inept, and emphasising 'the pre-eminence of the social whole over its individual parts' (1984, 1, as referenced by Jones & Karsten 2008). An autonomous human agent's view that is strongly interpretive in nature is also criticised as

being 'strong on action, but weak on structure', and has little to say on issues of 'constraint, power and large-scale social organization' (1993, 4, as referenced by Jones & Karsten, 2008). To reconcile these differences, Giddens proposes that structure and agency be seen as mutually constitutive dualities, and that the central concern should be the relationship between individuals and society (Jones & Karsten, 2008).

In this study, we reject positivism which we feel restricts the subject matter of inquiry. This restriction forces the researcher to avoid the world of consciousness and humanly created meanings and see the subject matter of inquiry as determined by objective social structures. Strong interpretivism is also rejected because the issue of context is critical in this study as it brings about the understanding of constraint, power and other structures that impact on how the agent works. The authors demonstrated this rejection of positivism and strong interpretivism by adopting both, i.e., the objective stance, which is strong on structure, with the purpose of acquiring preliminary objective understanding of the E-Commerce phenomenon, given the limited prior empirical work done (Nielinger, 2003); and an interpretive stance which is strong on action so as to understand the E-Commerce phenomenon through the meanings SMEs assign to them. In so doing, the researcher was able to identify the structures, the SME actions, and the relationship between the two – thereby abiding by Giddens's intentions of the structuration theory that conceptualises structures and agents as a mutually constitutive duality and that structure does not determine action, but nor is action independent of structures.

9.3.2 Structure is a 'virtual order of transformative relations'

Another feature of structuration theory is that structures are a 'virtual order of transformative relations'. This makes structuration theory a difficult theory to use as it deals with issues of social phenomena at a high abstract level rather than if their particular instantiation were related to a specific context (Jones & Karsten, 2008). To implement this feature of structuration theory in the E-Commerce phenomenon, the researcher particularised the theory in it (Chapter 3) so as to analyse how structural rules and resources within the environmental, organisational and E-Commerce contexts influence and are influenced by the process of E-Commerce adoption and implementation.

When particularised, structures as rules and resources could be observed only when they featured in SMEs' on-going E-Commerce actions – thereby 'existing only in their instantiation and as memory traces orienting conduct' (Jones & Karsten, 2008, 146).

9.3.3 Agents are knowledgeable about their actions and continuously reflect on their

Giddens stipulates that 'every member of a society must know (either through their discursive consciousness, practical consciousness or through their unconscious sources of cognition)…a great deal about the workings of that society by virtue of his or her participation in it' (1979, 250). Agents use this knowledge to make an informed choice in their actions and interactions with one another. In fulfilling this feature of structuration theory, the researcher viewed all participants in the study of the E-Commerce phenomenon in Tanzania, specifically SME owners as knowledgeable agents who engage in the transformation or the retention of structures in their action, not simply as agents who have no prior understanding of the rules and resources present in their context. Adopting an interpretive approach in this study allowed participants to narrate their accounts of the E-Commerce phenomenon. They did so by drawing on known structures and reflecting upon them prior to presenting an informed account of their experiences. Such participants, according to Jones & Karsten (2008, 137), 'are not passive objects, subject to exogenous forces, or ignorant of the influences on their actions'.

9.3.4 Agents always have the possibility to do otherwise

Giddens views human agents as having the power to act except in situations where they have been drugged and manhandled by others. This power comes from their ability to know 'a great deal about the workings of that society by virtue of his or her participation in it' (1979, 250). With this power, agents have the ability to do what is not expected (1989, 258), for example, either to oppose or comply with structural constraints which places limits upon the feasible range of options open to them in a given circumstance (Jones &Karsten, 2008).

In abiding by this feature of structuration theory, all participants in this study were perceived as having the power to do otherwise (given their knowlegability) as they constantly draw on existing structures, which they continuously produce and reproduce. The knowledgability or awareness of structures that are enabling could result in the agent's compliance whilst structures that are perceived as constraining could lead to resistance. For example, the awareness of mobile technology as a structure that is enabling in the participation of E-Commerce and the digital economy, led SME owners to support its use and, in so doing, to reproduce and sustain the same structure. The awareness that websites as a structure that constrains E-Commerce, however, was resisted to a degree and SME owners who had adopted and institutionalised E-Commerce decided to do 'otherwise' by featuring it minimally in their E-Commerce actions and interactions.

9.3.5 Unacknowledged conditions and unintended consequences

A social system works in a context-dependent, unpredictable, non-linear process, in which intended strategies often lead to purposeful actions, carried out in an intentional manner for certain reasons within conditions of knowledgeability (Giddens 1979;1984; Balogun & Johnson, 2005). This implies that the production and reproduction of society is not wholly intended or comprehended by social actors (Jones & Karsten, 2008), but can be unintended, producing unpredictable outcomes that would not have taken place if a social actor had acted differently. This feature of structuration theory was implicated in the study of the E-Commerce phenomenon in Tanzania. SMEs were perceived to be knowledgeable agents who had the power to do otherwise. This power can lead them to act in a manner that produces actions that were not intended to happen. For example, SME owners' used their employees' personal mobile phones with the sole purpose of efficiency for business. That action, however, produced one that was not intended by those initiating that pattern of behaviour: discontented employees. Whilst the use of a mobile is seen across most LDCs as a resource that can be shared, given that LDCs are characterised by a culture in which mobile phones are often divided or shared among people (Pfaff, 2010; James & Versteeg, 2007), this study proves that in the context of the

SME respondents of this study, such social generalisations are not necessarily agreeable due to the profit-driven nature of the context.

9.3.6 Essential recursiveness of social life

The unintended and intended consequences of social practices react back on practices or patterns of behavior, causing a feedback loop that conditions social reproduction and implicates transformations. This fundamentally determines the process of structuration through which systems are maintained and changed over time (Boudon, 1982; Giddens, 1982; Knorr-Cetina, 1981). The feedback loop is a recursiveness of social life that makes society a complexity of recurrent practices that constitute social institutions (Jones & Karsten). Social institutions, and specifically the individual actor's actions which are responsible for producing and reproducing social behavioural practices, constitute part of this social complexity.

In the study of the E-Commerce phenomenon in Tanzania, each participant was perceived as an individual actor – for example, an employee was perceived as an individual actor different from the SME owner who was also an individual actor in his/her own right. Each of these actors contributes to the complexity of the recurrent practices of E-Commerce phenomenon in Tanzania–given the power they possess as knowledgeable agents of their context. It is thus imperative to understand each actor's individual actions with respect to their ongoing relationship with E-Commerce social structures or social institutions in Tanzania.

9.3.7 Time space distanciation

One of the features of structuration theory is that societies *stretch* over spans of time and space (Jones & Karsten, 2008), thereby linking the temporality of the individual with that of institutions. That is, the ongoing production and reproduction of structure through action over time leads to a distinctive concern with routinisation on all aspects of temporality of day-to-day life, the directionality of the human lifespan from birth to death, and the temporality of social institutions (Giddens, 1981, 28). Routinised behaviour provides individuals with ontological security, which underpins their personal

identity (Jones & Karsten, 2008). Time and space were features that were observed in the study of the E-Commerce phenomenon in Tanzania. E-Commerce structures were constructed over spans of time and space by knowledgeable actors to produce repetitive predictable social behaviours that sustain these E-Commerce structures. For example, SMEs' comparison of before and after use of mobile technology to facilitate E-Commerce was a demonstration of a time and space feature of structuration. The routine use of mobile technology as part of E-Commerce structures did mediate contacts (Giddens, 1984, 68) within and between organisations and, therefore, facilitated some level of social integration at a distance (Jones & Karsten, 2008).

9.4 Summary

This chapter used two methods for evaluating the study. Firstly, the principles laid out in 1999 by Klein & Myers were used for conducting and evaluating interpretive field studies. The rationale for this evaluation is epistemological assumptions of this study which are based on an interpretive paradigm giving explicit recognition to the world of consciousness and humanly created meanings. In this realm of discourse, the researcher was not divorced from the phenomenon of investigation but was part and parcel of it. This unity necessitated the researcher's constant vigilance regarding any personal assumptions in respect of the context to be investigated, and assumptions derived from literature on the E-Commerce phenomenon, so as to not impose these on the respondents. In so doing, the researcher achieved the hermeneutic principle that all human understanding is achieved by iterating between considering the interdependent meaning of parts and the whole that they form, whilst simultaneously critically reflecting on the social and historical background of the research setting, so that the intended audience can see how the current situation under investigation emerged through the voice of the participants and not of the researcher. So instead of imposing, the researcher strove to understand E-Commerce through the meanings that the Tanzanian people assign to them and the structures that sustain them – a process that necessitated continuous interaction between researcher and respondents. Although the focus of the study was at an organisation level – the SME – the researcher did treat each respondent individually to allow for a reflection on any sensitivity to possible differences in interpretations,

specifically in multiple narratives or stories of the same sequence of events; and to also allow sensitivity to possible biases and systematic distortions in the narratives (Klein & Myers, 1999).

The researcher also evaluated the study based on the adopted theoretical lens used to understand how E-Commerce structures or behavioural practices are produced and re-produced over time. Using structuration theory as a theoretical lens for the study, for evaluation purposes the researcher used Jones and Karsten's 2008 features of structuration theory which have potential implications for Information Systems research. The researcher followed an agency-structure paradigm which acknowledges that all human beings are knowledgeable agents whose knowledge is constrained and enabled by the structures they are confined to, and that the same agents, given time and space, have the power to change the same structures. This process leads to the production and reproduction of unintended and intended consequences of social practices and implicates the process of structuration through which systems are maintained and changed over time (Boudon, 1982; Giddens, 1982; Knorr-Cetina, 1981).

9.5 Conclusion

The goal of this chapter is to evaluate the conduct of the study. Demonstrated is whether the study met each principle laid out by Klein and Myers in1999 for conducting and evaluating interpretive field studies, and Jones and Karsten's 2008 guide to structuration theory. By applying a dialogic and suspicious thinking within a hermeneutic process, the study produced a dialogic context specific understanding of E-Commerce that is unique to the SME and is more likely to contribute to studies in an LDC context. Also shown is how the researcher's preconceived notions of E-Commerce in Tanzania were revived through this dialogic engagement in which the researcher, whilst gathering data on the phenomena, was also simultaneously learning and understanding E-Commerce from an SME context specific environment. The researcher revealed no hidden agendas except in the need to surface contradictions in practice on the E-Commerce phenomena. Through numerous examples, the study shows why SME owners conceptualise E-Commerce they way they do.

CHAPTER 10: CONCLUSION AND RECOMMENDATION

10.1 Introduction

The goal of this study, presented in Chapter 1, was to investigate environmental and organisational behavioural practices by which E-Commerce becomes socially constructed in SMEs in LDCs. The literature on the E-Commerce phenomena was presented in Chapter 2. The study's underlying philosophical approach was covered in Chapter 3, and its research methodology in Chapter 4. The research findings were presented in chapters 5, 6 and 7. A discussion of the findings was given in Chapter 8 in which the connections between the theoretical lenses and the research findings were drawn in order to analyse the empirical materials. The execution of the study was evaluated in Chapter 9. Here Klein and Myers's 1999 set of principles for conducting and evaluating interpretive field studies and Jones and Karsten's 2008 features of structuration theory were used. The purpose of this present chapter is to review the extent to which the study addresses the research questions and goal of the study.

The rest of this chapter is organised as follows: Section 10.2 revisits the research questions and goal of the study; Section 10.3 presents the contributions of the study towards theory and practice; Section 10.4 concludes the study by outlining any future work that could be conducted on the topic.

10.2 Revisiting Research Questions

The purpose of this study is to investigate environmental and organisational practices by which E-Commerce becomes socially constructed by SMEs in LDCs. The focus is on how E-Commerce is typically made sense of by Tanzanian SMEs and how this sense making is produced, sustained and affected by the environmental and organisational conditions and resources of Tanzanian SMEs. The research questions, as presented in Chapter 1, are discussed in the subsections below.

10.2.1 Socially constructed practices of Tanzanian SMEs with regard to E-Commerce

The findings show that, according to the SME participants in this study, their conceptualisation of E-Commerce was that of the use of mobile technology for communication and transactive purposes, and a minimal use of websites for advertising. The mobile understanding was regardless of the E-Commerce maturity level–all SME owners thought that E-Commerce consisted of this component only. This offers SME owners the power to transform their business interactions within their industry by evading the learning curve and investment costs associated with transactive web based E-Commerce, and reduces the difficulties of Internet problems as a result of bandwidth or electricity. With the recurrent use of mobile technology, SME owners developed an extensive mobile use practice for E-Commerce to achieve functionalities, such as communication and buying and selling activities, without being constrained by the inadequacy of website and E-Commerce infrastructural issues. It was mainly those SMEs that had adopted and institutionalised it that understood E-Commerce as merely a website providing minimal benefits. SMEs with this understanding made use of a limited-use practice of a website, one that offered them a perception of sophistication within the industry more than that of SMEs that had no websites.

SME owners attributed their general failure to adopt and institutionalise E-Commerce to environmental factors, for example, the lack of readily available and accessible expertise, the electricity cuts and lack of industrial support specifically from financial institutions. To curb some of these challenges, some SME owners, especially those that had adopted and institutionalised E-Commerce, embarked on a partnership-for problem-solving practice. The paucity of competent employees with adequate experience and exposure to ICT and other skills needed to adequately staff E-Commerce initiatives and projects resulted in an outsourcing practice, specifically amongst SMEs that were unable to form partnerships with foreign ICT companies. With this practice, SME owners could respond to the limited in-house shortage skills challenge whilst they simultaneously allowed their organisation to focus on their core business processes.

10.2.2 The interaction of environmental and organisational conditions with SMEs' on-going situated use of E-Commerce to produce and reproduce its social structures

SME's enactment of the aforementioned practices for E-Commerce was a response to organisational and environmental conditions which were perceived to constrains full E-Commerce adoption and institutionalisation. Such organisational factors include the unavailability (inaccessibility) of employees with adequate experience and exposure to ICT and other skills needed to adequately staff E-Commerce initiatives and projects; the lack of capabilities such as risk-taking behaviour and funding to finance E-Commerce projects; the nonexistence of strategic, tactical and operational models to govern web-based business activities and E-Commerce initiatives; and the lack of technological resources and management support for web-based business activities and E-Commerce initiatives. Environmental factors that were perceived as hindrances include the lack of market e-Readiness for web-based E-Commerce use, specifically among local consumers; the lack of industrial support, specifically financial institutions; the lack of institutional e-Readiness, such as government and ICT education institution commitment; and socio-cultural beliefs and values that fail to support web-based E-Commerce.

These organisational and environmental factors translated into perceptions that SME owners attached to the successful adoption and implementation of web-based E-Commerce. Such perceptions represented a blue print which SME owners used to understand and create meanings about E-Commerce in Tanzania. This blue print, created from SMEs' interactions with organisational and environmental factors, resulted in the SMEs' enactment of an extensive mobile use practice, limited-use practice of a website, a partnership-for-problem-solving practice and an outsourcing practice. Enactment of these practices produced and reproduced structures of E-Commerce. Structures of signification for E-Commerce were created and recreated when SME owners established an understanding that E-Commerce in Tanzania was limited to the minimal use of websites and extensive use of mobile technology and that successful adoption and institutionalisation is possible through a partnership-for-problem-solving practice and an outsourcing practice. This understanding was reinforced when SME owner's consciously made an informed choice to forego investment in institutionalised web-based E-Commerce and choose to invest in mobile technology, thereby minimally implicating

websites in their recurrent social practice whilst having full management support for mobile technology use. As SMEs became more knowledgeable about what mobile technology could achieve for them, they developed supporting mechanisms, such as the provision of an airtime quota. In so doing, they unconsciously articulated and reinforced their understanding of E-Commerce to the rest of the organisation, creating a shared understanding that associates E-Commerce purely with a hybrid of a static website and mobile services. As this understanding became institutionalised, it produced a practice that associated the use of mobile phones and a static website with E-Commerce success in LDCs.

Structures of domination for E-Commerce were created and recreated when SME owners successfully used contextual resources during business transactions to acquire power that could effect change in their businesses. SME owners' contributed to the production and reproduction of structures of domination when they enacted a limited-use practice of website for E-Commerce, extensive mobile use practice, a partnership-for-problem-solving practice, and an outsourcing practice. They used the website, mobile technology, partnerships, and outsourcing as resources which became the basis for acquiring the power to effect change during interactions. SMEs that had the ability to exploit these resources were able to change interactions to their advantage and, in so doing. contributed to the production and reproduction of structures of domination.

Structures of legitimation for E-Commerce were created and recreated when SME owners established the limited-use practice of website for E-Commerce, extensive mobile use practice, a partnership-for-problem-solving practice and an outsourcing practice which become normalised to ascertain whether certain behaviours are right or wrong, legitimate or illegitimate. The limited-use practice of websites for E-Commerce was legitimised by socio-cultural norms such as bargaining, a culture of mistrust, and a language barrier, some of which are environmental factors seen to hinder web-based E-Commerce. SMEs' practice of a cash-based transaction contributed to the reproduction of structures of legitimation which created E-Commerce sanction rules because SMEs that do not conform to such a practice were perceived as not trustworthy as compared with those that do. Further, such a practice easily supported a bargaining practice which had been reinforced

and legitimised to become part and parcel of how SMEs do business in Tanzania. However, both these practices of a cash basis system and bargaining are difficult to implement in a web-based E-Commerce environment, because they require a personal interaction that can facilitate the development of a trustful rapport between the seller and buyer. Such practices are thought to hamper SMEs' intentions to institutionalise web-based E-Commerce because it tends not to support such a practice. This extensive mobile use practice, for example, created organisational norms which defined boundaries of expected practice, for example, the provision of mobile credits to employees who used their mobile phones for business activities, and the use of such mobile credits within a specific time frame. Such norms, however, though not officially formalised, invoked sanctions when not adhered to. For example, as SMEs became aware of the importance of partnership with foreign organisations and with the sanctions associated with not having such partnerships, they–specifically those in the ICT industry – pursued the formation of partnerships and, in so doing, made it a norm which influenced the behaviour and perceptions of behaviour of both themselves and consumers. They, then, think that only SMEs that are accredited and affiliated with established ICT companies can provide trustworthy services. This normalised behaviour contributed positively to the adoption of E-Commerce because through partnerships SMEs were able to acquire the necessary ICT expertise training, advice and reliable server maintenance, all being crucial for E-Commerce.

10.2.3 Unintended consequences of enacted E-Commerce practices

The SMEs' extensive use of mobile phone technology as a response to their interaction with organisational and environmental factors produced the unintended consequences of employee resentment towards organisational use of their personal mobile phones. This use would, of course not have taken place had the SME owner acted differently by, for example, establishing formal rules mutually agreed to with employees on the use of personal mobile phones for work purposes. Such an unanticipated consequence was perceived as detrimental to the employee-employer relationship as it failed to define the boundaries of employee personal phone usage. This extensive mobile use practice also produced unintended consequences, namely, that of employees acting as whistleblowers in

an attempt to right a wrongdoing and thereby giving the SME owner the power to effect change. Further, the employees' resentment of the use of mobile phones to curb socio-cultural practices that impeded the adoption of E-Commerce resulted in their being slightly more time conscious, organised, and cognisant of deadlines. Such unintended consequences were not anticipated by the SME owners when they embarked on the extensive mobile use practice in their organisation, but were the outcome of the instantiation of rules and resources of mobile technology use.

10.3 Contributions and recommendation of the study

10.3.1 Contribution to theory

10.3.1.1 Use of structuration theory as a lens to understand the E-Commerce phenomena in LDCs

Much of the literature in developing countries, and in LDCs in particular, has tended to follow a positivist underlying philosophical approach. This is not surprising, given that the methodological principles associated with positivism have traditionally been the dominant form in the major IS academic journals (Orlikowski & Baroudi, 1991). The use of such a dominant approach to study technology artifacts in developing countries has tended to ignore the social contextual elements in which the technological artifact or phenomena is embedded. This is because Information Systems is much more than simply the development of computer-based business systems: electronic and information technology is now so fundamental within society that IS as a discipline must concern itself with the general evolution of human communication (Mingers & Gill, 1997).

This study strongly recognised the importance of the context in which the E-Commerce phenomena is being studied to be as important as the phenomena itself. To appreciate the contextual understanding, the study is grounded in an interpretivism philosophical approach. Using structuration theory it investigates how contextual (environmental and organisational) practices influence how E-Commerce becomes socially constructed in SMEs in LDCs. This is the first time, as far as the researcher knows, that structuration theory has been used as a lens to study the E-Commerce phenomena in LDCs. The use of structuration theory and an interpretivisim approach has yielded new understanding of

the study of E-Commerce from the SME owner's perspective – an understanding that associates E-Commerce consistently with mobile technology, thereby making mobile technology an important feature of E-Commerce. It also indicates the importance of business partners who could provide alternative solutions to contextual challenges such as technological and resource problems. With such partners, SME owners envisioned that E-Commerce institutionalisation beyond the interactivity maturity stage was possible.

10.3.1.2 Addressing Giddens's concern for the engagement of organisations within a plural and overlapping social system

Jones and Karsten (2008) have noted that a significant number of studies using structuration theory tend to limit themselves to the internal structural properties of the organisation, and neglect Giddens's concern for the engagement of organisations within a plural and overlapping social system (Montealegre,1997). This study contributes to theory by incorporating structural and contextual social forces (Steinerowski & Steinerowska-Streb, 2012) from the environment with the internal structural properties of the organisation, to the study of E-Commerce and in so doing acknowledges the degree to which E-Commerce plays a role in social setting transformation (Montealegre, 1997). It is advocated, therefore, that structuration theorists should not only analyse organisational and IT structural properties, but should also analyse how structural rules and resources within the environmental, organisational, and IT contexts influence and are influenced by the process of IT implementation (Montealegre, 1997). When structural rules and resources within these contexts (which influence and are influenced by the process of E-Commerce adoption and institutionalisation) were analysed, the study was able to present a better account of E-Commerce. It showed how socio-cultural variables impact E-Commerce – an important contribution that had not been presented by Molla and Licker (2005), but one that is nevertheless crucial to the study of technology adoption in least developed countries (Avegerou, 2008; Jarzabkowski, 2004; Wilson, 2003). This finding shows the importance of the crucial role that context plays in the adoption of technology and how that technology should be compatible with the context in which it is to be situated. These understandings enhance the literature on E-Commerce in least developed

countries, and provide an explanation as to why developing countries fail to institutionalise E-Commerce.

10.3.1.3 Contributing to the E-Commerce debate in LDCs and ICT4D

Although most studies in LDCs, which have tended to assess the ICT situation in the country, examine how ICT is being integrated into SMEs business culture, or inspect differences in quantity or quality of Internet access points, their use and users, few have highlighted specific contextual and organisational factors that affect E-Commerce adoption. This is partly because literature on E-Commerce in developing countries and LDCs in particular, is obscure, uncertain and characterised by a list of challenges which, if not remedied, will continue to plague these countries (Oxley & Yeung, 2001). This study has provided a contextual understanding of E-Commerce in LDCs and has brought to the fore the challenges and opportunities faced by SMEs. By using structuration theory as a lens the study not only contributes to the limited amount of empirical interpretive Information Systems research on E-Commerce in least developed countries, but also contributes to theory by providing a comprehensive understanding of the interaction between SMEs and E-Commerce – specifically on how practices associated with E-Commerce become (re)constituted by SME owners in their recurrent engagement with E-Commerce. It provides a theoretical link between the discourse of Tanzanian society and E-Commerce, and guidelines to those intending to either implement E-Commerce or ICT-related projects in Tanzania. It provides a contribution to the E-Commerce debate in LDCs and ICT4D in the following ways:

i. Provides a theoretical understanding of the enactment of E-Commerce in Tanzania, and how the E-Commerce phenomenon is commonly implicated in Tanzania SMEs' practices.

ii. Identifies factors that affect E-Commerce adoption in Tanzania and how these factors came about, given the context of SMEs in LDCs.

iii. Shows how these factors affect SMEs' perception and understanding of E-Commerce. That is, it provides an explanation as to what E-Commerce means to

LDC SMEs and to what extent E-Commerce is considered a crucial element in their strategies.

iv. Shows how these factors are also affected by SMEs' practices; and through this effect, these factors become either sustained or dismantled by SMEs' actions.

10.3.2 Contribution to Practice

The use of an interpretivism underlying philosophical approach to the study gives practitioners a better understanding of how SMEs perceive E-Commerce in Tanzania amidst organisational and environmental opportunities and constraints. With this understanding, practitioners can better design appropriate E-Commerce policies and interventions for SMEs in Tanzania, thereby avoiding the development of policies, strategies, and business practices based on the assumption of universal imperatives which have high risks of misguiding and frustrating local efforts to make sense of and appropriate the new technology (Avgerou, 2001).

Practitioners at national level are able to develop national ICT and telecommunication policies that support E-Commerce adoption and institutionalisation from the SMEs' understanding. This is important, given the limited resources which LDCs face. Practitioners at an organisational level can also devise policies that address organisational barriers in the adoption of E-Commerce, as reported by SME employees and trading partners. For example, because E-Commerce was perceived as merely having a static web presence and a heavy reliance of the mobile device, results pertaining to the unintended consequences resulting from the extensive mobile use practice call for a policy of mobile usage in the organisation, specifically for rules and regulations as to how personal phones were to be used for work purposes. Managers who fail to recognise that mobile devices are technology artifacts which have to be invested in, just like any other organisational resource, are at a risk of having employees with low morale. By developing context specific policies that address SME problems, available resources become utilised in a more effective manner without resulting in unanticipated consequences.

10.3.3 Recommendations of the study

The evidence in this study leads to a recommendation that the stakeholders need to consider the deployment of:

(i) an effective E-Commerce policy that specifically is tailored around both traditional and wireless (mobile) E-Commerce, given how mobile devices have profusely penetrated Tanzania;

(ii) an investment and implementation strategy for human resource training in ICT that is context specific and practical to SMEs, given the continuous establishment from SMEs that the shortage of ICT experts hampers E-Commerce developments and renders the nation open to a dependency syndrome in respect of foreign experts;

(iii) a feasible on-going partnership programme between government institutions, education institutions and the private sector in addressing the ICT skills challenges and social ills, such as graduates' lack of business ethics;

(iv) an investment strategy in bandwidth and bandwidth relief cost programmes for SMEs so as to enable them to access ICT social networking forums for educational purposes at a lower cost, given the reported high ICT training cost;

(v) the encouragement of a credit-based system that is context relevant (for example, without a collateral system) from supporting industries like financial institution to SMEs to enable them to participate in large commercial transactions. This would alleviate the constraints of a cash-based system, which is the local business social practice, and the need for a foreign investor or partner who imposes stringent requirements that are not beneficial to the local SMEs;

(vi) the establishment of a thorough formal quality check mechanism on ICT products and services rendered to avoid dubious transactions and a continuous corruption and bureaucracy check at both private and institutional level; and

(vii) educating SME owners to treat mobile technology use, specifically mobile devices, as a technological investment for the organisation, which should be purchased and not borrowed from employees.

10.4 Limitations of the study and Future work

10.4.1 The use of Structuration Theory

The use of structuration theory as a lens of enquiry has provided a comprehensive understanding of E-Commerce perceptions, created and sustained by both organisational and environmental concerns in the Tanzanian context. It was possible to understand the E-Commerce phenomena from a social perspective of SMEs actions and therefore have SME's interpretation of their own action in social context. However the use of the theory made it possible to focus more on the social practices thereby paying minimal attention to E-Commerce as a technology. In addition, it did not provide means of explaining the relationship between E-Commerce and the SME actor, for example, to explain what SME owners and the E-Commerce technology become as a result of their position in a network, and the power that emerges from dynamic configurations of these interactions. In the future, the study could be enriched with the use of the actor-network theory to understand the relationship between E-Commerce and the SME actor. Further, from a critical realist perspective, the use of structuration theory stops short of emancipation (Carlsson and Tona, 2012, 43). It does not go beyond the understanding of the SMEs lived experiences of E-Commerce so as to provide means of providing change. The use of structuration theory further presents the need to question whether the social structures in Tanzania are forever immovable, or painfully slow to evolve with respect to the e-commerce phenomenon. Given the high uptake of mobile technology, future research can also investigate the possibility of a more dynamic conceptualisations of social structure (i.e.,that the broader global societal structures jolt country-specific social structures forward to the extent where technological adoption and change occurs more dynamically).

10.4.2 Context specific understanding of E-Commerce

Despite these limitations, it was possible to see how E-Commerce use mediated SME activities; and also how it was understood – that of a hybrid of a static website, one which provides minimal benefit such as advertising opportunities and extensive mobile use. This understanding points to the need for future research to identify potential opportunities to

integrate the current apparently disparate elements of mobile and static website E-Commerce. That is, future research should embark on the proposition of an E-Commerce model for SMEs that works on a mobile platform providing Web 2.0 services whilst harnessing the benefits of an advertising E-Commerce model. It is through such a business model that SMEs will truly be able to diffuse and rejuvenate themselves in the global economy and, in so doing, reduce the need for E-Commerce web-based institutionalisation. Although mobile technology provided enormous benefits as a resource used in interactions, the results shows evidence of power dynamics in usage. There is, therefore, a need for more interpritivist studies in LDCs to understand the E-Commerce phenomena, given the emergence of mobile commerce. Such power relations had not apparently been reported in literature. With more studies being conducted in this area, the extent of mobile use in an organisation could be better understood.

10.4.3 Focusing on SME

This study was conducted in SMEs where ownership and management is inseparable. Thus we are aware that the owners' level of formal education and e-commerce knowledge might have influenced their decision to adopt e-commerce as well as the level of e-commerce maturity. These two factors have not been analysed in this study and offer an opportunity to do so in the future.

10.4.4 Reporting of the data collection process

Given the challenges observed in the data collection phase, there is a need for more researchers in LDCs to report on their findings and experiences with regard to their data collection procedures. Although there have been proposals and potential challenges on how to avoid data gathering problems, for example those outlined by Myers and Newman (2007), these are too general because LDC challenges are context-specific and necessitate the researchers' understanding of the context prior to embarking in the qualitative interview. With more reports on how the data gathering techniques and challenges experienced are overcome, the easier it will be for other researchers.

REFERENCE

Abbasi, M. R., Sarlak, M. A., Ghorbani, A., & Abbaasi, H. E. (2010). CSFs of e-commerce admission in small and medium size enterprises (SMEs). *Africa Journal of Business Management*, 4(16), 3480-3490.

Abbasi, A. (2007). E-Commerce development in Iran. *Webology*, *4*(4). Retrieved from http://www.webology.org/2007/v4n4/a49.html

Abdulghader, A.A., Dalbir, S. & Ibrahim, M. (2011). Potential E-Commerce adoption strategies for Libyan organization. *International Journal of Information and Communication Technology Research*, *1*o(7). Retrieved http://esjournals.org/journaloftechnology/archive/vol1no7/vol1no7_5.pdf

Abdullai, B (2009): The Electronic Payment System as an e-commerce enabler: The Macedonian perspective. Published in: Proceedings of the International Conference: Economic & Social Challenges and Problems, Faculty of Economics, University of Tirana, Albania , Vol. IV, No. December, 2008 (11. December 2008): pp. 33-73

Abou-Shouk, M., Megicks, P., & Lim, W. M. (2012). Perceived benefits and e-commerce adoption by SME travel agents in developing countries: evidence from Egypt. *Journal of Hospitality & Tourism Research*.

Abraham, R. (2007). Mobile phones and economic development: Evidence from the fishing industry in India. *Journal of Information Technologies andInternational Development*, *4*(1), 5.

Abu-Elsamen, A., Chakraborty, G., & Warren, D. (2010). A process-based analysis of e-procurement adoption. *Journal of Internet Commerce*, *9*,(3-4), 243-259.

Agarwal, R., & Prasad, J. (1997). The role of innovation characteristics and perceived voluntariness in the acceptance of information technologies. *Decision Sciences*, *28*, (3), 555-582.

Aker, J.C., & Mbiti, I.M. (2010). Mobile phones and economic development in Africa. *The Journal of Economic Perspectives, 24* (3), 207-232.

Alam, S. S., Khatibi A., Ahmad I.S., & BinIsmail, H. (2008). Factors affecting E-Commerce adoption in the electronic manufacturing companies in Malaysia. *International Journal of Commerce and Management*, *17* (1/2), 125 – 139.

Alawneh, A., & Hattab, J. (2009). An empirical study of sources affecting E-Business value creation in Jordanian banking services sector. *International Arab Journal of e-Technology*, 1(2).

AlBakri, A. (2013). The Internet-EDI Systems Adoption by Enterprises in Jordan: Descriptive Analysis of Adoption, Strategies and Benefits. *International Journal of Internet and Distributed Systems*, 2013, 1, 18-24

Albi, E., & Lieberman, A. E. (2013). Bringing Clean Energy to the Base of the Pyramid: The Interplay of Business Models, Technology, and Local Context. *Journal of Management for Global Sustainability*, 1(2), 141-156.

Albion, P. R., Jamieson-Proctor, R., & Finger, G. (2011). Age-related differences in ICT access and confidence among pre-service teachers. In: *ASCILITE 2011: 28th Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education: Changing Demands, Changing Directions*, 4-7 Dec 2, Hobart, Australia

Alghamdi, R., Drew, S., & AlGhaith, W. (2011). Factors influencing E-Commerce adoption by retailers in Saudi Arabia: A qualitative analysis. *Electronic Journal of Information Systems in Developing Countries*, *47*(7), 1-23.

Aljifri, H. A., Pons, A & Collins, D. (2003). Global E-Commerce: A framework for understanding and overcoming the trust barrier. *Information Management & Computer Security*, 11 (3), 130-138

AlNoor, M. & Arif, B.R. (2011). Adoption of B2B e-commerce by the SMEs in Bangladesh. *Innovative Systems Design and Engineering*, *2*, (6), 48-59.

AlShohaib, K., Frederick E., AlKandari, A.A.J., & Dorsher, M.D. (2009). Factors influencing the adoption of the internet by public relations professionals in the private and public sectors of Saudi Arabia. *Management Communication Quarterly*, *24* (1), 104-121.

AlSlamy, N.M.A. (2008). E-Commerce security. *International Journal of Computer Science and Network, 8 (5), 340-344*

AlSukkar, A., & Hasan, H. (2005). Toward a model for the acceptance of internet banking in developing countries. *Information Technology for Development*, *11*(4), 381–398.

Alvarez, R. (2002). Confessions of an information worker: A critical analysis of information requirements discourse. *Information and Organization*, *12*, 85-107.

Amit, R., & Zott, C. (2001). Value creation in E-Business. *Strategic Management Journal*, *22*, 493–520.

Apulu, I., Latham, A., & Moreton, R. (2011). Factors affecting the effective utilisation and adoption of sophisticated ICT solutions: Case studies of SMEs in Lagos, Nigeria. *Journal of Systems and Information Technology*, 13(2), 125-143.

Asiabugwa, M. A., & Munyoki, J. M. (2012). E-Commerce Strategy and Performance of Commercial Banks in Kenya. Ritrieved from http://erepository.uonbi.ac.ke/bitstream/handle/123456789/10209/aibuma%202012-submission%20236.pdf?sequence=1

Asiimwe, E. N., & Lim, N. (2010). Usability of government websites in Uganda. *Electronic Journal of e-Government*, 8(1), 1-12.

Astley, W. G. (1985). Administrative science as socially constructed truth. Administrative Science Quarterly, 497-513.

Attewell, J., & Savill-Smith, C. (2004). *Learning with mobile devices: Research and development: A book of papers*. London, LSDA.

Attride-Stirling, J. (2001). Thematic networks: An analytic tool for qualitative research. *Qualitative Research*, *1*, 385.

Au, A.K., & Enderwick, P. (2000). A cognitive model on attitude towards technology adoption. *Journal of Managerial Psychology*, *15* (4), 266-282.

Avgerou, C. (1996). Transferability of information technology and organisational practices. In M. Odedra-Straub (Ed.), *Global information technology: Socio-economic information technology Socio-economic development* (pp.106–115). Nashua, N.H.: Ivy League.

Avgerou, C. (2001). The significance of context in information systems and organizational change. *Information Systems Journal*, *11*, 43-63.

Avgerou, C. (2005). Doing critical research in information systems: Some further thoughts. *Information Systems Journal*, *15*, 103–109.

Avgerou, C. (2008). Information systems in developing countries: A critical research review. *Journal of Information Technology*, *23*, 133–146.

Ayat, M., Masrom M., Sahibuddin S., & Sharifi M. (2011). Issues in implementing IT governance in small and medium enterprises. *Second International Conference on Intelligent Systems, Modelling and Simulation (ISMS)*, 197 – 201.

Ayres, L., Kavanaugh, K., & Knafl, K. A. (2003). Within-case and across-case approaches to qualitative data analysis. Qualitative Health Research, 13(6), 871-883.

Bakewell, O. (2010). Some reflections on structure and agency in migration theory. *Journal of Ethnic & Migration Studies*, *36*(10), 1-24.

Belouadha, F. Z., Omrana, H., & Roudiès, O. (2012). Web Services-Enhanced Agile Modeling and Integrating Business Processes. arXiv preprint arXiv:1202.4099.

Balogun, J., & Johnson, G. (2005). From intended strategies to unintended outcomes: the impact of change recipient sensemaking. *Organization Studies*, *26* (11), 1573-1601.

Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, *44* (9), 1175-1184.

Bansal R. (2011) Growth of the Electronic Commerce in China and India: A Comparative Study, *Journal of Asia-Pacific Business*, 12:4, 356-374

Bansal, G., & Chen, L. (2011). If they trust our E-Commerce site, will they trust our social commerce site too? Differentiating the trust in E-Commerce and S-Commerce: The moderating role of privacy and security concerns. Proceedings of the *Sixth Midwest Association For Information Systems Conference,* Omaha, Ne May, 20-21, 2011.

Bao, J., & Sun, X. (2010). A conceptual model of factors affecting E-Commerce adoption by SMEs in China. In *Management of e-Commerce and e-Government (ICMeCG), 2010 Fourth International Conference on* (pp. 172-175).

Barley, S.R. (1986). Technology as an occasion for structuring: evidence from the observation of CT scanners and the social order of radiology departments. *Administrative Sciences Quarterly*, *31*, 78-109.

Barzilai-Nahon, K., & Scholl, H.J. (2004). Similarities and differences of E-Commerce and E-Goverment: Insights from a pilot study. In R. Sprague (Ed.), *40th Hawaii International Conference on System Sciences* (HICSS40),.Waikoloa/Big Island, Hi: IEEE, 2007, 92c (1-10).

Basias, N., Themistocleous, M., & Morabito, V. (2012). Influential Factors of SOA Adoption in E-banking'. *Proceedings of European, Mediterranean and Middle Eastern Conference on Information Systems,* Munich, Germany, June.

Bayo-Morione, A., & Lera-Lo´Pez, F. (2007). Firm-level analysis of determinants of ICT adoption in Spain. *Technovation*, *27*, 352–366.

Becker, M. C. (2005). The concept of routines: Some clarifications. Cambridge Journal of Economics, 29(2), 249–262.

Becker, J. U., Greve, G., and Albers, S. (2009). The impact of technological and organizational implementation of CRM on customer acquisition, maintenance, and retention. *International Journal of Research in Marketing*, *26*(3), 207–215.

Beckwith, S., Dickinson A., & Kendall, S. (2008). The "Con" of concept analysis: A discussion paper which explores and critiques the ontological focus, reliability and antecedents of concept analysis frameworks. *International Journal of Nursing Studies*, *45*, 1831–1841

Bekefi, T. (2006). Tanzania: Lessons in building linkages for competitive and responsible entrepreneurship. Cambridge, Mass.: UNIDO and Kennedy School of Government, Havard University.

Bella, G., Giustolisi, R., & Riccobene, S. (2011). Enforcing privacy in E-Commerce by balancing anonymity and trust. *Computers & Security*, *30*(8), 705–718

Bhaskar, R. (1979). The possibility of naturalism. Hemel Hempstead: Harvester.

Bloch, N. & Catfolis, T. (2001). B2B E-Marketplaces: How to succeed. *Business Strategy Review*, *12*(3), 20-28.

Boadi, R.A., Boateng, R., Hinson, R., & Opoku, R.A (2007). Preliminary insights into M-Commerce adoption in Ghana. *Information Development*, *23*(4), 253-265.

Boateng, R., & Molla, A. (2006). Developing e-Banking capabilities in a Ghanaian Bank: Preliminary lessons. *Journal of Internet Banking and Commerce*, 11(2), 2006-08.

Boateng, R., Heeks, R., Molla, A., & Hinson, R (2008). E-Commerce and socio-economic development: Conceptualizing the link. *Internet Research*, *18*(5), 562-594.

Boland, R.J., & Greenberg, R.H. (1992). Method and metaphor in organizational analysis accounting, *Management and Information Technologies*, *2* (2), 117-141.

Booth A., Boehringer C., Economides V., Holt B., Seres S., & Tan S. (2003). High Tech Entrepreneurship and Strategy Main Project Approaches to Opportunity: PayPal, Billpoint and Online Payments. Available http://faculty.insead.edu/adner/PREVIOUS/Projects-May03/Approaches.pdf

Boritz, J.E., & No, W.G. (2011). E-Commerce and privacy: Exploring what we know and opportunities for future discovery. *Journal of Information Systems*, *25*(2), 11.

Boudon, R. (1982). *The unintended consequences of social action*. New York: St. Martin's Press.

Boudreau, M., & Robey, D. (2005). Enacting integrated Information Technology. *Organization Science*, 16(1), 3–18.

Braun, V., & Clarke V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77-101.

Briggs, A., & Brooks, L. (2011). Electronic payment systems development in a developing country: the role of institutional arrangements. *The Electronic Journal on Information Systems in Developing Countries, 49*(3), 1-16.

Boateng R., Robert Hinson , Richard Heeks & Alemayehu Molla (2008) E-commerce in Least Developing Countries: Summary Evidence and Implications, *Journal of African Business*, 9:2, 257-285

Borrego, M., Douglas, E. P., & Amelink, C. T. (2009). Quantitative, qualitative, and mixed research methods in engineering education. *Journal of Engineering Education*, 98(1), 53-66.

Brooks, L. (1997). Structuration theory and new technology: analysing organizationally situated computer-aided design (CAD). *Information Systems Journal*, *7*, 133-151.

Brooks, L., & Atkinson, C. (2004). Structurantion in research and practice: Representing actor networks, their structurated orders and translations. Information Systems research: Relevant theory and informed practice. In *IFIP 8.2 Conference* .B. Kaplan, D. T. Iii, D. Wastell, T. Wood-Harper & J. Degross (Eds.). Boston: Kluwer Academic Publishers, 389-409.

Brooks, L., Atkinson, C., & Wainwright, D. (2008). Adapting structuration theory to understand the role of reflexivity: Problematization, clinical audit and information systems. *International Journal of Information Management*, *28*, 453–460.

Brown, A. M. (2001). Democratization and the Tanzanian state: Emerging opportunities for achieving women's empowerment. *Canadian Journal of African Studies / Revue Canadienne des Études Africaines*, *35*(1), 67-98.

Brown, C., Hofer, T., Johal, A., Thompson, R., Nicholl, J., Franklin, B.D., & Lilford, R.J. (2008). An epistemology of patient safety research: a framework for study design and interpretation; Part 1. Conceptualising and developing interventions. *Quality and Safety Health Care*, *17*, 158–162.

Brown, D.H., & Thompson, S. (2011). Priorities, policies and practice of e-government in a developing country context: ICT Infrastructure and diffusion in Jamaica. *European Journal of Information Systems*, 20, 329–342.

Brown, I., Hoppe, R., Mugera, P., Newman, P. & Stander, A. (2004). The impact of national environment on the adoption of Internet banking: Comparing South Africa and Singapore, *Journal of Global Information Management*, *12*(2), 1 - 26.

Brown, J.S. & Duguid, P. (1991). Organizational learning and communities-of practice: Toward a unified view of working, learning and innovation. *Organization Science*, *2*, 40-57.

Budde.com (2013). Tanzania - Telecoms, Mobile, Broadband and Forecasts. Retrieved from http://www.budde.com.au/Research/Tanzania-Telecoms-Mobile-Broadband-and-Forecasts.html. Accessed 16 August 2013

Buff, C.L., Seifert, C.F., & Van Ness, R.K. (2007). Gender and E-Commerce: Towards an understanding of the relationships between gender and Internet Commerce success factors. Ft. Myers Beach, Fa: Academy Of Business Disciplines.

Butler, T., & O'Reilly, P. (2010). Recovering the ontological foundations of the grounded theory method. *31st International Conferences on Information Systems, St. Louis 2010 ICIS 2010 Proceedings*. Paper 75.

Cabral, L., & Hortacsu, A. (2010). The dynamics of seller reputation: Evidence from ebay. *The Journal of Industrial Economics*, 58(1), 54-78.

Cardoso, A and Ramos, I. (2012). Looking at the Past to Enrich the Future: A Reflection on Klein and Myers' Quality Criteria for Interpretive Research" *The Electronic Journal of Business Research Methods* Volume 10 Issue 2 2012 (pp 77-88)

Carlsson, S.A., and Tona, O. (2012). IS evaluation in the fusion view: An emergence perspective. In D. Salmon, Ed.), *6th European Conference on Information Management and Evaluation*. University College Cork, Ireland (pp.41-46). Reading, UK: Academic Publishing International.

Carmody, P. (2009). *A new socio-economy in Africa? Thintegration and the mobile phone revolution*. Institute for International Integration Studies. No.279. Retrieved from https://www.tcd.ie/iiis/documents/discussion/pdfs/iiisdp279.pdf

Carter, L., & Belanger, F. (2003). The influence of perceived characteristics of innovating on E-Government Adoption. *Electronic Journal of E-Government*, *2*(1), 11-20.

Carter, S., & Rosa, P. (1998). The financing of male and female owned businesses. *Entrepreneurship and Regional Development*, *10*(3), 225-241.

Carter, S. (2000). Improving the numbers and performance of women-owned businesses: some implications for training and advisory services. *Education & Training*. *42*(4/5), 326-333.

Castleman, T., & Chin, C. (2002). *ECommerce and the competitiveness of small enterprises: a study of the restaurant industry*. Working Paper 2002/01, School Of Management Information Systems, Deakin University, Melbourne.

Chandra, A., Sharma, V., Kumaraguru, P., & Kesharwani, S. (2009). Psychoanalysis of privacy policies of e-commerce & BPO websites in Indian circumstances. *GlobalJournal of Enterprise Information System*, *1*(1)

Chang, T. P., & Chen, S. Y. (2012). An efficient algorithm of frequent XML query pattern mining for ebXML applications in e-commerce. *Expert Systems With Applications*, 39(2), 2183-2193.

Chang, E. C., & Tseng, Y. F. (2011). Research note: E-store image, perceived value and perceived risk. *Journal of Business Research*, 1-7.

Chatterjee, D., Grewal, R., & Sambamurthy, V. (2002). Shaping up for E-Commerce: Institutional enablers of the organisational assimilation of web technologies. *MIS Quarterly*, *26*(2), 65-89.

Chen, J., & McQueen, R. J. (2010). Internet-based E-Commerce in small Chinese firms in New Zealand. In M. Hunter, & F. Tan (Eds.), *Technological advancement in developed and developing countries: Discoveries in global information Management* (pp. 248-283). Hershey, Pa: Information Science.

Chen, J., Zhang, C., Yuan, Y., & Huang, L (2007). Understanding the emerging C2C Electronic Market in China: An experience-seeking social marketplace. *Electronic Markets*, *17*, 2, 86-100.

Chen, S., & Ning, J. (2002). Constraints on E-Commerce in less developed countries: The case of China. *Electronic Commerce Research*, *2*, 31-42.

Chesbrough, H., & Rosenbloom R. (2002). The role of the business model in capturing value from innovation. *Industrial and Corporate Change*, *11*(3), 529–556.

Chin, W.W., & Gopal, A. (1995). Adoption intention in GSS: Relative importance of beliefs. *Data Base Advances*, *26*(2-3). 42-64.

Ching, A.Y., Ooi, K., Lin B., & Raman, M. (2009). Factors affecting the adoption level of C-Commerce: An empirical study. *Journal of Computer Information Systems*, 13-22.

Chong, W. K., Shafaghi, M., & Tan, B.L. (2011). Development of a business-to-business critical success factors (B2B CSFS) framework for Chinese SMEs. *Marketing Intelligence & Planning*, 29(5), 517 – 533.

Chong, A. Y. L., Ooi, K. B., Lin, B., & Raman, M. (2009). Factors affecting the adoption level of c-commerce: an empirical study. *Journal of Computer Information Systems*, 50(2), 13.

Chu, C., & Smithson, S. (2003). Organisational structure and e-business: A structurational analysis. In *Proceedings of the 5th International Conference on Electronic Commerce* (pp. 205 -212). New York: ACM.

Ciborra, C.U. (1995). EDI in the food industry: The case of Barilla in Italy. In H. Krcmar., N. Bjorn-Andersen, and R. O'Callaghan, (Eds), *EDI in Europe: How it works in practice* (pp.239-58). New York, NY: John Wiley.

Cloete E. (2002). SMEs in South Africa: Acceptance and adoption of E-Commerce. In S. Lubbe (Ed.) *The economic and social impacts of E-Commerce* (pp.121- 134). LIDEA Group Publishing.

Colle, R.D., & Yonggong, L. (2002). ICT capacity-building for development and poverty alleviation enhancing the role of agricultural universities in China. In *Third Asian for Information Technology in Agriculture*. Beijing, October 26-28.

Colley, A., & Comber, C. (2003). Age and gender differences in computer use and attitudes among secondary school students: What has changed? *Educational Research*, *45*,155–165.

Corbitt B.J., Thanasankit, T., & Yi, H. (2003). Trust and E-Commerce: A study of consumer perceptions. *Electronic Commerce Research and Applications*, *2*(3), 203-215.

Cortell, A.P., & Davis, J.W. (1996). How do international institutions matter? The

domestic impact of international rules and norms. *International Studies Quarterly*, *40*(4), 451-478.

Creswell, J. W., & Zhang, W. (2009). The application of mixed methods designs to trauma research. *Journal of Traumatic Stress*, 22(6), 612-621.

Creswell, J. W., Fetters, M. D., & Ivankova, N. V. (2004). Designing a mixed methods study in primary care. *The Annals of Family Medicine*, 2(1), 7-12.

Crowston, K., Sawyer, S., & Wigand, R. (2001). Investigating the interplay between structure and information and communications technology in the real estate industry. *Information Technology & People*, 14(2), 163-183

Cukier, W., Ngwenyama, O., Bauer, R., & Middleton, C. (2009). A critical analysis of media discourse on information technology: Preliminary results of a proposed method for critical discourse analysis. *Information Systems Journal*, *19*(2),175-196.

Cyr, D. (2011). Website design and trust across cultures. *Global Usability Human–Computer Interaction Series,*(1), 39-55.

Dagne, T. (2011). *Tanzania: Background and current conditions*: *CRS Report for Congress*.[Washington DC]: Congressional Research Service 7-5700.

Dai, Q., & Kauffman, R. (2002). Business models for internet-based B2B electronic markets *International Journal of Electronic Commerce*, *6*(4), 41-72.

Daly, J., Kellehear, A., & Gliksman, M.(1997). *The public health researcher: A methodological approach*. Melbourne, Australia: Oxford University Press.

Damsgaard, J., & Lyytinen, K. (1998). Contours of diffusion of electronic data interchange in Finland overcoming technological barriers and collaborating to make it

happen. *Journal of Strategic Information Systems*, 7, 275–297.

Damsgaard, J., & Lyytinen, K. (2001a). The Role of Intermediating Institutions in the Diffusion of Electronic Data Interchange (EDI): How Industry Associations Intervened in Denmark, Finland, and Hong Kong, *The Information Society* (17:3) 2001, pp 195-210.

Damsgaard, J., & Truex, D. (2000). Binary Trading Relations and the Limits of EDI Standards: The Procrustean Bed of Standards, *European Journal of Information Systems* (9:3) 2000, pp 173-188.

Damsgaard, J., & Lyytinen, K (2001b) Building Electronic Trading Infrastructures: A Public or Private Responsibility? *Journal of Organizational Computing and Electronic Commerce*, 11:2, 131-151

Damsgaard, J., & Lyytinen, K. (2000c, December). The Dynamics of Factors Explaining EDI Diffusion in Hong Kong in the late 1990's. *In PACIS* (p. 76).

Dani, A.R., & Krishna, P.R. (2001). An E-check framework for electronic payment systems in the web-based environment. Electronic Commerce and Web Technologies lecture notes in Computer Science (2115), 91-100.

Datta, P. (2011). A preliminary study of ecommerce adoption in developing countries. *Information Systems Journal*, 21(1), 3-32.

Davern, M.J., & Wilkin C.L. (2009). Why did they do that? Variability in routine transactions. *Information Technology & People*, *22*(1), 78 – 88.

DeMooij, M., & Hofstede, G. (2002). Convergence and divergence in consumer behavior: implications for international retailing. *Journal of retailing*, 78(1), 61-69.

De Vaujany, F. (2008). Capturing reflexivity modes in IS: A critical realist approach. *Information and Organization*, *18*(1), 51-72.

Deetz, S. (1996). Describing differences in approaches to organization science: rethinking Burrell and Morgan and their legacy. *Organization Science*, *7*(2), 191-207

DeSanctis, G., & Poole, M.S. (1994). Capturing the complexity in advanced technology use: Adaptive structuration theory. *Organization Science*, *5*(2), 121-147.

Devadoss, P.R., & Pan S.L, Huang J.C. (2002). Structurational analysis of E-Government Initiatives: A case study of SCO. *Decision Support Systems*, *34*, 253–269.

Devos, J., Van Landeghem, H., & Deschoolmeester, D. (2009). IT Governance in SMEs: Trust or control? In G. Dhillon, B.C. Stahl, and R. Baskerville (Eds.), *Information systems: creativity and innovation in small and medium-sized enterprises* (pp.135– 149), Berlin; Heidelberg: Springer.

Devos, J., Van Landeghem, H., & Deschoolmeester, D. (2012). Rethinking IT Governance for SMEs. *Industrial Management & Data Systems*, *112*(2) 206-223.

Dholakia, R.R., & Kshetri, N. (2004). Factors impacting the adoption of the Internet among SMEs. *Small Business Economics*, *23*, 311–322.

Dicicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education*, *40*(4), 314-321.

Dickson P.H., Weaver K.M and Hoy F. (2006). Opportunism in the R&D alliances of SMEs: The roles of the institutional environment and SME size. *Journal of Business Venturing*, *21*, 487-513.

Dillard, J.F., & Yuthas, K. (2002). Ethical audit decisions: A structuration perspective. *Journal of Business Ethics*, *36(*1/2), 49-64.

Dixit, P., & Stump, J. L. (2011). A response to Jones and Smith: It's not as bad as it seems; or, five ways to move critical terrorism studies forward. *Studies in Conflict & Terrorism*, *34*(6), 501-511.

Donner, J. (2007). The rules of beeping: Exchanging messages via intentional "missed calls" on mobile phones. *Journal of Computer-Mediated Communication*, 13(1), 1-22.

Dorn, J., Gr¨Un C., Werthner, H., & Zapletal, M. (2009). Service-oriented transformation of business models in to deployment artifacts. Retrieved from http://www.ec.tuwien.ac.at/~dorn/papers/iseb09.pdf

Downing, C.E. (2010). Is web-based supply chain integration right for your company? *Communications of the ACM*, *53*(5).

Du, H. S., Yu, H., Fang, Y., & Wang, S. (2012). Empirical investigation of EachNet: the eBay model of C2C online auction in China. *Engineering Management, IEEE Transactions on*, 59(1), 160-175.

Duncombe, R., & Molla, A. (2006). E-Commerce development in developing countries: Profiling change-agents for SMEs. *The International Journal of Entrepreneurship and Innovation*, *7*(3), 185-196.

Dwivedi, Y.K., Singh, N., & Williams, M.D. (2009). Guest editorial on cultural issues in global E-Commerce diffusion: Adoption and use, *The Data Base for Advances in Information Systems*, *40*(4), 385-390.

Edwards, T., Delbridge, R., & Munday, M. (2005). Understanding innovation in small and medium-sized enterprises: a process manifest. *Technovation*, 25(10), 1119-1127.

Efendioglu, M.A., Yip, F.V., & Murray, W.L. (2002). E-Commerce in developing countries: Issues and influences. Retrieved http://userwww.sfsu.edu/~ibec/papers/25.pdf

Eikebrokk, T.R., & Olsen, D.H. (2007). An empirical investigation of competency factors affecting E-Business success in European SMEs. *Information & Management*, *44*, 364–383.

Elder-Vass, D. (2008). Integrating institutional, relational, and embodied structure: An emergentist perspective. *British Journal of Sociology*, *59*, 281–99.

Emirbayer, M., & Mische, A. (1998). What is agency? *American Journal of Sociology*, *103*, 962–1023

Engel, R., Krathu, W., Zapletal, M., Pichler, C., van der Aalst, W. M., & Werthner, H. (2011). Process Mining for Electronic Data Interchange. *In E-Commerce and Web Technologies* (pp. 77-88). Springer Berlin Heidelberg.

Eoxley, J., & Yeung, B. (2001). E-Commerce readiness: institutional environment and international competitiveness. *Journal of International Business Studies*, *32*(4), 705-723.

Esselaar, P., & Miller, J. (2001). Towards electronic commerce in Africa: a perspective from three country studies. *Southern African Journal of Information and Communication*, *2*(1).

Evans, D., & Yen, D. (2005). E-Government: an analysis for implementation: framework for understanding cultural and social impact. *Government Information Quarterly22*, 354–373.

Evans K (2013) eBays's U.S. sales climb 16% in Q1. https://www.internetretailer.com/mobile/2013/04/17/ebays-us-sales-climb-16-q1

Ezenwoke, A., Misra, S., & Adigun, M. (2013). An Approach for e-Commerce On-Demand Service-oriented Product line Development. *Acta Polytechnica Hungarica*, 10(2).

Fahamu: Learning for Change. Retrieved from http://tallprojects.conted.ox.ac.uk/globalhealthprogramme/report/tanzania.pdf

Fandy, M. (2000). Information technology, trust, and social change in the Arab world. *Middle East Journal*, *54*(3), 378-394.

Featherman, M.S., Miyazaki, A.D., & Sprott, D.E. (2010) Reducing online privacy risk to facilitate E-Service adoption: The influence of perceived ease of use and corporate credibility. *Journal of Services Marketing*, *24* (3), 219 – 229.

Feilzer, M. Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of mixed methods research*, 4(1), 6-16.

Feldman, S. M., & Pentland, B. T. (2003). Reconceptualizing organizational routines as a source of flexibility and change. Administrative Science Quarterly, 47(4), 94–118

Fereday, J., & Muir-Cochrane, E. (2008). Demonstrating rigor using thematic analysis: A hybrid approach of inductive and deductive coding and theme development. *International journal of qualitative methods*, 5(1), 80-92.

Forlin, M., Larcher, R., & Schivo, S. (2008). Review of current use of mobile telephony in developing regions. Retrieved from http://www.it46.se/projects/unitn_ict4sd/assignments/ict4sd_forlin_larcher_schivo.pdf

Frost, D., Goode, S. & Hart, D. (2010). Individualist and collectivist factors affecting online repurchase intentions. *Internet Research*, 20(1), 6 – 28.

Furuholt, B., & Kristiansen, S. (2007). A rural urban digital divide? Regional aspects of Internet use in Tanzania. *Electronic Journal of Information Systems in Developing Countries* , *31*(6)1-15.

Fusilier, M., & Durlabhji, S. (2005). An exploration of student Internet use in India: The technology acceptance model and the theory of planned behavior. *Campus-Wide Information Systems*, *22*(4), 33-246.

Gao, P., & Lyytinen, K. (2000). Transformation of China's telecommunications sector: A macro perspective. *Telecommunications Policy*, *24(*8), 719-730.

Gattiker, U.E., Perlusz S., & Bohmann, K. (2000). Using the Internet for B2B activities: A review and future directions for research. *Internet Research*, *10* (2), 126–140.

Ghashghai, E., & Lewis, R. (2003). Issues affecting internet use in Afghanistan and developing countries in the Middle East (No. Rand/Ip-231-Cmepp). Rand Corp Santa Monica Ca.

Ghobakhloo, M., Arias-Aranda, D., & Benitez-Amado J. (2011). Adoption of E-Commerce applications in SMEs. *Industrial Management & Data Systems*, *111*(8), 1238 - 1269

Gibbs J., Kraemer K.L., & Dedrick J. (2002). Environment and policy factors shaping E-Commerce diffusion: A cross-country comparison. Center for Research on Information Technology and Organizations. Retrieved from http://www.escholarship.org/uc/item/2x73003z

Giddens, A. (1976). Classical social theory and the origins of modern sociology. *American Journal of Sociology*, *81*(4)703-729.

Giddens, A. (1979). *Central problems in social theory: Action, structure and contradiction in social analysis*. Los Angeles: University of California Press.

Giddens, A. (1982). *Profiles and critiques in social theory*. London: Macmillan.

Giddens, A. (1984). *The constitution of society: Outline of the theory of structuration*. Los Angeles: University of California Press.

Gilaninia, S., Danesh, S. Y., Amiri, M., Mousavian, S. J., & Eskandarpour, B. (2011). Effective Factors on Adoption of E-Commerce in SME Cooperative. *Interdisciplinary Journal Of Contemporary Research In Business*, 3(6).

The Global Information Technology Report 2013. Growth and Jobs in a Hyperconnected World. Retrieved from http://www3.weforum.org/docs/WEF_GITR_Report_2013.pdf Date accessed 16 August 2013.

Glaser BG, Strauss AL. The Discovery of Grounded Research: Strategies for Qualitative Research. New York: Aldine De Gruyter; 1967

Goedhuys, M., Janz, N., & Mohnen, P. (2013). Knowledge-based productivity in "low-tech" industries: evidence from firms in developing countries. *Industrial and Corporate Change*.

Goles, T., & Hirschheim, R. (2000). The paradigm is dead, the paradigm is dead - long live the paradigm: The legacy of Burrell and Morgan. *Omega*, *28*, 249–268

Golle, P. & Partridge, K. (2009). On the anonymity of home/work location pairs. *Pervasive*, Lncs *5538*, 390–397.

Gonçalves, R., Santos, S. S., & Morais, E. P. (2010). E-Business maturity and information technology in Portuguese SMEs. Communications of the IBIMA Vol. 2010 (2010), Article ID 303855, 8 pages http://www.ibimapublishing.com/journals/CIBIMA/cibima.html

González, A.G (2004). Paypal: The legal status of C2C payment systems. *Computer Law & Security Report*, *20*(4), 293-299.

Goksoy, A., Vayvay, O., & Karabulut, G. (2012). The New Competitive Advantage: Technological Change: An Application of Electronic Data Interchange Implementation in SME in Automotive Industry. *International Journal of Business Administration*, 3(6), p25.

Gospodarek, T. (2010). Middle office restrictions for e-commerce systems. *Journal of Internet Banking and Commerce,* 15(3), 226-236.

Graham, J.L. (1985). The influence of culture on the process of business negotiations: an exploratory study. *Journal of International Business Studies*, *16*(1), 81-96.

Grandón, E., Nasco, S.A., & Mykytyn, P.P. (2011). Comparing theories to explain E-Commerce adoption. *Journal of Business Research*, *64*(3), 292–298.

Grandon, E.E., & Pearson, J.M. (2004). Electronic commerce adoption: An empirical study of small and medium US Businesses. *Information & Management*, *42*, 97–216.

Grant, R., Clarke, R.J. & Kyriazis, E. (2010). Research needs for assessing online value creation in complex consumer purchase process behavior. *Journal of Retailing and Consumer Services*, *17*, 53–60.

Greenhalgh, T., & Stones, R. (2010). Theorising big IT programmes in healthcare: strong structuration theory meets actor-network theory. *Social science & medicine,* 70(9), 1285-1294.

Gregor, S. and Johnston, R.B. (2000). "Developing an Understanding of Interorganizational Systems: Arguments for Multi-Level Analysis and Structuration Theory." *Proceedings of 8th European Conference on Information Systems, Vienna, Austria*: (Forthcoming).

Grewal, R., Chakravarty, A., & Saini, A. (2010). Governance mechanisms in business-to business electronic markets. *Journal of Marketing*, *74*, 45–62.

Gunasekaran A., & Ngai, E.W.T (2008). Adoption of E-Procurement in Hong Kong: An empirical research. *International Journal of Production Economics*, *113*, 159–175.

Gunasekaran, A., Mcgaughey, R., Ngai, E.W.T., & Rai B. (2009) E-Procurement adoption in the south coast SMEs. *International Journal of Production Economics*, *122*,161–175.

Gupta, B., Iyer, L.S., & Weisskirch, R.S. (2010). Facilitating global E-Commerce: A comparison of consumers' willingness to disclose personal information online in the U.S. and in India. *Journal of Electronic Commerce Research*, 11(1). Retrieved from http://www.csulb.edu/web/journals/jecr/issues/20101/paper4.pd

Habermas, J. (1979). *Communication and the evolution of society*, London: Heinemann.

Habermas, J. (1984). *The theory of communicative action: Reason and rationalization of society* (1). Boston: Beacon Press.

Habermas, J. (1987). The theory of communicative action: Lifeworld and social system (2). Boston: Beacon Press.

Hadjimanolis, A. (1999). Barriers to innovation for SMEs in a small less developed country (Cyprus). *Technovation*. *19*(9), 561-570.

Hakansson, H., & Snehota, I. (2006). No business is an island: The network concept of business strategy. ScandinavianJournal of Management, *22*, 256–270.

Hambrick, D.C. (1981). Environment, strategy, and power within top management teams. *Administrative Science Quarterly*, *26*(2), 253- 275.

Hamilton, J. (2003). Are main lines and mobile phones substitutes or complements? evidence from Africa. *Telecommunications Policy*, *27*, 109–133.

Hanson, W. E., Creswell, J. W., Clark, V. L. P., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, 52(2), 224.

Hardcastle, M.A.R., Usher, K. J., & Holmes, C.A. (2005). An overview of structuration theory and its usefulness for nursing research. *Nursing Philosophy*, *6*(4), 223-234.

Harré R (2009). Saving critical realism. *Journal for the Theory ofSocial Behaviour*, 39(2), 0021–8308.

Harris, D., Guru, B.K., & Avvari, M.V (2011). Evidence of firms' perceptions toward electronic payment systems (EPS) in Malaysia. *International Journal of Business and Information*, *6*(2), 226-245.

Harris, R., & Davison, R. (1999). Anxiety and involvement: Cultural dimensions of attitudes toward computers in developing societies. *Journal of Global Information Management*,*7*(1) 26-38.

Hasan, L. & Abuelrub, E. (2011). Assessing the quality of web sites. Applied *Computing and Informatics*,*9*(1), 11–29.

Hashim, F., Alam, G.M.. & Siraj, S. (2010). Information and communication technology for participatory based decision-making-e-management for administrative efficiency in higher education. *International Journal of Physical Sciences*, *5*(4), 383-392.

Hasselbring, W., & Weigand, H., (2001). Languages for Ebusiness Communication: State of the Art. *Industrial Management and Data Systems*, April 2001, pp. 217-226

Hawk, S. (2004). A comparison of B2C E-Commerce in developing countries. Electronic *Commerce Research*, *4*, 181-199.

Hayes, N., & Walsham, G. (2000). Competing interpretations of computer-supported cooperative work in organizational contexts. Organization, *7*(1), 49-67.

He, D., Lu, Y., & Zhou, D. (2008). Empirical study of consumers' purchase intentions in C2C electronic commerce. *Tsinghua Science & Technology*, 13(3), 287-292.

Hecker, M., Dillon T. S., & Chang, E. (2008). Privacy ontology support for E-Commerce. *Internet Computing*, *12*(2), 54 – 61.

Helbig, N., Gil-García, J.R., & Ferro, E. (2009). Understanding the complexity of electronic government: Implications from the digital divide literature. *Government Information Quarterly*, *26*, 89–97.

Heracleous, L., & Barrett, M. (2001). Organizational change as discourse: Communicative actions and deep structures in the context of information technology implementation. *The Academy of Management Journal, 44*(4), 755-778.

Hernandez, B., Jimenez, J., & Martín, M. J. (2009). Adoption vs acceptance of E-Commerce: Two different decisions. *European Journal of Marketing, 43* (9), 1232 – 1245.

Heyvaert M., Maes B., & Onghena. · P (2011). Mixed methods research synthesis: definition, framework, and potential. *Qual Quant*. Springer Science Business Media B.V

Hinson, R. E., & Boateng, R. (2007). Perceived benefits and management commitment to e-business usage in selected Ghanaian tourism firms. *The Electronic Journal of Information Systems in Developing Countries*, 31.

Ho, S., Kauffman, R.J., & Lian T. (2007). A growth theory perspective on b2c E-Commerce growth in Europe: An exploratory study. *Electronic Commerce Research and Applications*, *6*, 237–259.

Hofstede, G. (1983). The cultural relativity of organizational practices and theories. *Journal of international business studies*, 14(2), 75-89.

Hofstede, G. (1984). Culture's consequences: International differences in work-related values (Vol. 5). sage.

Hofstede, G. (1991). *Culture & organizations: Software of the mind*. London:McGraw Hill.

Hofstede G. (1993). Cultural constraints in management theories. *The Executive*, 7(1), 81-94.

Holsapple, C.W., & Singh, M. (2000). Toward a unified view of electronic commerce, electronic business, and collaborative commerce: A knowledge management approach. *Knowledge and Process Management*, *7*(3), 151-164.

Houser, D., & Wooders, J. (2006). Reputation in auctions: Theory, and evidence from eBay. *Journal of Economics & Management Strategy*, 15(2), 353-369.

Hsiao, H., Kim, T.H., & Perrig, A., Yamada, A., Nelson, S.C., Gruteser M., & Meng, W. (2012). LAP: Lightweight Anonymity and Privacy. In *Security and Privacy (SP*), *2012 IEEE Symposium on (*pp. 506-520).

Hua, H., Kandampully, J., & Juwaheer, T. (2009). Relationships and impacts of service quality, perceived value, customer satisfaction, and image: An empirical study. *The Service Industries Journal*, *29*(2), 111-125.

Huang, L., Yin, K., & Farn, C. (2006). The influence of consumers' consciousness of institutional factors on initial trust building. *Proceedings of the 5th International Conference on Telecommunications and Informatics,* Istanbul, Turkey, May 27-29 (pp.360-365).

Huff, L., & Kelley, L., (2005). Is collectivism a liability? The impact of culture on organisational trust and customer orientation: a seven nation study. *Journal of Business Research, 58*, 96-102.

Van Huy, L.V., Rowe, F., Truex, D. & Huynh, M.H. (2012). An empirical study of determinants of E-Commerce adoption in SMEs in Vietnam: An economy in transition. *Journal of Global Information Management,* 20(3),23-54.

Hyden, G. (1999). Top-down deemocratization in Tanzania. *Journal of Democracy*, *10*(4), 142-155.

Iacovou, C. L., Benbasat I., & Dexter, A. S. (1995). Electronic Data Interchange and small organizations: Adoption and impact of technology. *MIS Quarterly*, *19* (4), 465-485.

Iannacci, F., & Hatzaras, K. S. (2012). Unpacking ostensive and performative aspects of organisational routines in the context of monitoring systems: A critical realist approach. *Information and Organization*, *22*(1) 1-22.

ICGLR. (2005). International Conference on the Great Lakes Region Regional Programme of Action for Economic Development and Regional Integration. Project No. 3.3.10. *East African Submarine Cable System Project (Eassy)*. Retrieved from https://icglr.org/img/pdf/project_3-3-10-east_african_cable_system_project_eassy_.pdf

Iddris, F. (2012). Adoption of E-Commerce Solutions in Small and Medium-Sized Enterprises in Ghana. *European Journal of Business and Management*, 4(10), 48-57.

Igau, O. A., Kassim, A.W., & Tahajuddin, S. (2011). Non-business E-Commerce in Malaysia: An investigation of key adoption. *American Journal of Economics and Business Administration*, *3*(1), 177-185.

Iivari, J., Hirschheim, R., & Klein, H. K. (1998). A paradigmatic analysis contrasting information systems development approaches and methodologies. *Information Systems Research*, 9(2), 164-193.

Iresearch. (2008). *Second-quarter monitoring report on online purchase market in China*. Retrieved from http://b2b.toocle.com/detail-3413474.html

IT Governance Institute. (2007) Cobit 4.1. United States of America

ITU. (2009) *Information society statistical profiles: Africa.* Retrieved from http://www.itu.int/itu-d/ict/material/issp09-afr_final-en.pdf

ITU (2013). Tanzania Internet Usage and Marketing Report. Retrieved from http://www.internetworldstats.com/af/tz.htm 16 August 2013

Janks, H. (1997). Critical discourse analysis as a research tool. Discourse: Studies in the Cultural Politics of Education,18(3), 329-342. Retrieved from http://www.unisa.edu.au/hawkeinstitute/cslplc/documents/cdaresrchfnl.pdf

Janom, N., & Zakaria, M. S. (2009). B2B E-Commerce readiness assessment indicators based on the critical success factors. In *International Conference on Electrical Engineering and Informatics, 2*, (pp.405-411).

Jarzabkowski, P. (2004). Strategy as practice: Recursiveness, adaptation and practices-in-use. *Organization Studies*, *25*(4), 529-560.

Jenamani, M., Routray, A., & Singh, V. (2011). A procedure using support vector data description and mutual information for end price assessment in online C2C auction. *Electronic Commerce Research*, 11(3), 321-340.

Jennex, M.E., Amoroso, D., & Adelakun, O. (2004). E-Commerce infrastructure success factors for small companies in developing economies. *Electronic Commerce Research*, *4*, 263–286.

Jiang, X., & Ji, S, (2009). Consumer online privacy concern and behavior intention: cultural and institutional aspects. *Conf-Irm Proceedings*. Paper 36_Jianyuan, Z.,

Jianyuan, Y., & Chunjuan, Z. (2009, September). An Empirical Study on influence factors for organizations to adopt B2B E-marketplace in China. *In Management and Service Science*, 2009. MASS'09. International Conference on (pp. 1-6). IEEE.

Jimenez-Martinez, J. (2004). The influence of EDI adoption over its perceived benefits. *Technovation*, *24*(1), 73-79.

Jobodwana, Z. N. (2009). E-Commerce and Mobile Commerce in South Africa: Regulatory Challenges. J. *Int'l Com. L. & Tech.*, 4, 287.

Johnson, M.E., & Whang, S. (2002). E-business and supply chain management: An overview and framework. Production and *Operations Management*, *11*(4).Retrieved from http://digitalstrategies.tuck.dartmouth.edu/cds-uploads/publications/pdf/Paper_POMS_eBuz.pd

Johnston, R.B. (2001). Situated action, structuration and actor-network theory: An integrative theoretical perspective: *Global co-operation in the new millennium*: *[Proceedings of the 9th European Conference on Information Systems*, Bled, Slovenia, June 27-29.

Jones, M. (1997). Structuration and IS. In W.L Currie,. & R.D.Galliers (Eds). *Re-thinking management information systems*. Oxford: Oxford University Press.

Jones, K., & Leonard, L. N. (2008). Trust in consumer-to-consumer electronic commerce. *Information & Management*, 45(2), 88-95.

Jones, M. R., & Karsten, H. (2008). Giddens's structuration theory and information systems research. *MIS Quarterly*, 32 (1)127-157.

Jones, M., & Nandhakumar, J. (1993). Structured development? A structural analysis of the development of an executive information system, In D. Avison, J.E. Kendall & J.I. DeGross (Eds.). *Human, organizational, and social dimensions of information and systems development* (pp.475– 496). North-Holland, New York,

Jones, S., Wilikens, M., Morris, P., & Masera, M. (2000). Trust requirements in E-Business: A conceptual framework for understanding the needs and concerns of different stakeholders. *Communications of the ACM*, *43*(12),81-87.

Joshi, J.B., Aref W.G., Ghafoor A., & Spafford, E.H. (2001). Security models for web-based applications: using traditional and emerging access control approaches to develop secure applications for the web. *Communications of the ACM*, *44*(2).

Kabak, Y. & Dogac, A. (2010). A survey and analysis of electronic business document standards. *ACM Computer Survey*,*42*(3).

Kaiser, P.J. (1996). Structural adjustment and the fragile nation: The demise of social unity in Tanzania. *The Journal of Modern African Studies*, *34*, 227-237.

Kao, D., & Decao, J. (2003). A strategy based model for E-Commerce planning. *Industrial Management and Data Systems*, *103*(4), 238-252.

Kao, D.T. (2009). The impact of transaction trust on consumers' intentions to adopt M-Commerce: A cross-cultural investigation. *Cyberpsychology & Behavior*, *12*(2), 225-229.

Kaplan, B., & Duchon, D. (1988). Combining qualitative and quantitative methods in information systems research: A case study. *MIS Quarterly*, *12* (4), 571-586.

Kapurubandara, M., & Lawson, R. (2006). Barriers to adopting ICT and E-Commerce with SMESs in developing countries: an exploratory study in Sri Lanka. *Collector*, 9 December.

Kapurubandara, M., & Lawson, R. (2009). Availability of E-Commerce support for smes in developing countries. *The International Journal on Advances in ICT for Emerging Regions*, *1*(1), 3 –11.

Karjalainen, K., & Kemppainen, K., (2008). The involvement of small-and medium-sized enterprises in public procurement: impact of resource perceptions, electronic systems and enterprise size. *Journal of Purchasing & Supply Management*, *14*, 230–240.

Karsten, H. (1995). It's like everyone working around the same desk: Organisational readings of Lotus Notes. *Scandinavian Journal of Information Systems*,*7*, 3-332.

Kauffman, R.J., Lee, Y.J., & Sougstad, R. (2009). Cost-effective firm investments in customer information privacy. *Proceedings of the 42nd Hawaii International Conference on System Sciences*.

Kauffman, R. J., Li, T., & Van Heck, E. (2010). Business network-based value creation in electronic commerce. *International Journal of Electronic Commerce*, *15*(1), 113–143.

Kaynak, E., Tatoglu, E., & Kula, V. (2005). An analysis of the factors affecting the adoption of electronic commerce by SMEs: Evidence from an emerging market. *International Marketing Review*, *22*(6), 623-640.

Kendall, J. D., Tung, L.L., Chua, K.H., Ng, C.H.D. & Tan, S.M. (2001). Receptivity of Singapore's SMEs to electronic commerce adoption. *The Journal of Strategic Information Systems*, *10*(3), 223-242.

Kenny, C. (2003). The Internet and economic growth in less-developed countries: A case of managing expectations? *Oxford Development Studies*, 31(1), 99-113.

Kijo–Ringo, N.D. (2004). Impact of investment in and utilization of ICTS on market extension: overview of Small and Medium Enterprises in Tanzania. Retrieved From Http://Www.Tzonline.Org/Pdf/Impactofinvestmentinandutilization.Pdf

Kim, Y., & Kiyoshi, N. (2007). The effect of SMEs' partnership for innovation: Case study of the Japanese manufacturing industry. In *Management of engineering and Technology*, Portland: Portland International Center for Management of Engineering and Technology (pp. 638-640)

Kleijnen, M., de Ruyter, K., & Wetzels, M. (2007). An assessment of value creation in mobile service delivery and the moderating role of time consciousness. *Journal of Retailing*, *83*(1), 33–46.

Klein, H.K., & Myers, M.D. (1999). A set of principles for conducting and evaluating interpretive field studies in Information Systems. *MIS Quarterly*, *23*(1), 67-93.

Knorr-Cetina, K.. (1981). Introduction: The micro-sociological challenge of macro-sociology: Towards a reconstruction of social theory and methodology. In K. Knorr-Cetina & A.V. Cicoure (Eds). *Advances in social theory and methodology: Toward an integration of micro- and macro-sociologies*. New York: Routledge & Kegan Paul.

Kort, W., & Gharbi, J.E. (2011). Call centers performance; An application of structuration theory. *Communications of the Ibima*. *Retrieved from* http://www.ibimapublishing.com/journals/CIBIMA/2011/606307/606307.pdf

Koufaris, M., Kambil, A. & Labarbera, P.A. (2001). Consumer behavior in web-based commerce: An empirical study. *International Journal of Electronic Commerce*, *6*(2), 115-138.

Kramer, J. (2007). Is abstraction the key to computing? *Communications of the ACM*, *50*(4), 36–42.

Krippendorff, K. (1980). Content Analysis: An Introduction to Its Methodology. Newbury Park, CA: Sage.

Kshetri, N. (2010). Normative and cognitive institutions affecting a firm's E-Commerce adoption. *Journal of Electronic Commerce Research*, *11*(2), 157-174.

Kuan, F., Ho, Y., & Chang, T. (2011). Study on the influence of consumers' perceived control and perceived risk to new E-Commerce technology innovation resistance.

Proceedings of the *International Conference on E-Business and E-Government (ICEE)* (pp.1 – 4).

Kuan, K.K.Y., & Chau, P.Y.K. (2001). A perception-based model for EDI adoption in small businesses using a technology-organization-environment framework. *Information and Management*, *38*(8), 507-521

Kurnia, S., & Ali, M. (2012). B2B E-Commerce adoption by the grocery industry in developing countries: Indonesia versus Bahrain. *Proceedings of the 45th Hawaii International Conference on System Sciences* (pp.3100-3109.

Kurnia, S., & Peng, F. (2008). Electronic commerce readiness in developing countries: The case of the Chinese grocery industry. Proceedings of the *41st Annual Hawaii International Conference on System Sciences* (pp.1-25).

Ladzani, W.M., & Van Vuuren, J.J. (2002). Entrepreneurship training for emerging SMEs in South Africa. *Journal of Small Business Management*, *40*(2), 154-161.

Lake, S. (2000). E-Commerce and LDCs challenges for enterprises and governments. Kathmandu – Nepal – 30-31 May 2000 Electronic Commerce Section. Retrieved from http://r0.unctad.org/ecommerce/event_docs/kathmandu_background.pdf

Lamb, R., & Kling, R. (2003). Reconceptualizing users as social actors in information systems research. *MIS Quarterly*, *27*(2), 197-236.

Lardner, J. (1999). I know what you did last summer and fall. *US News and World Report*, *126*(15), 55.

Lasky, S. (2005). A sociocultural approach to understanding teacher identity, agency and professional vulnerability in a context of secondary school reform. *Teaching and Teacher Education: Emotions, Teacher Identity and Change*, *21* (8), 899-916.

Laudon, K.C., & Traver, C.G (2010). *E-Commerce: Business, technology and society*. 6th Ed. Upper Saddle River, N.J.: Prentice Hall.

Leach, M., Mearns, R., & Scoones, I. (1999). Environmental entitlements: dynamics and institutions in community-based natural resource management. *World Development*, 27(2), 225-247.

Lee, C.K.M., Lau, H.C.W., Ho, G.T.S., & Ho, W. (2009). Design and development of agent-based procurement system to enhance business intelligence. *Expert Systems with Applications, 36*, 877–884.

Lee, S., & Lim, G.G (2003). The impact of partnership attributes on EDI implementation success. *Information & Management*, *41*, 135–148.

Leech, N. L., & Onwuegbuzie, A. J. (2009). A typology of mixed methods research designs. *Quality & Quantity*, 43(2), 265-275.

Leem, C.S., Suh, H.S, & Kim, D.S. (2004). A classification of mobile business models and its applications. *Industrial Management and Data Systems*, *104*(1), 78-87.

Leflaive, X. (1996). Organizations as structures of domination. *Organization Studies*, *17*(1), 23-47.

Li, D., Li, J., & Lin, Z. (2008). Online consumer-to-consumer market in China–a comparative study of Taobao and eBay. *Electronic Commerce Research and Applications*, 7(1), 55-67.

Li, L., & Qian, G. (2007). Partnership or self-reliance: prescriptions for small and medium-sized enterprises. *Journal of Business Strategy*, *28*(6), 29-33.

Li, Q., & Liu, Z. (2007). Research on Chinese C2C E-Business institutional trust mechanism: Case study on Taobao and E-Bay(Cn). Proceedings of the *International*

Conference on Wireless Communications Networking and Mobile Computing (pp.3787–3790).

Li, S. H., Chen, S. C., Hu, C. C., Wu, W. S., & Hwang, M. (2012). Business Process Auditing On An Soa Foundation. *International journal of innovative computing information and control*, 8(1 A), 243-254.

Lie, T., Fang, W., & Pavlou V. (2010). The triangular relationship among vendor, user and technology on trust in mobile commerce: A cross cultural comparison. Retrieved from http://scholar.google.co.za/scholar?q=triangular+relationship+among+vendor%2C+user+lie+2010&btnG=&hl=en&as_sdt=0%2C5

Lin, C., Huang, Y., Jalleh, G., Liu, Y., & Tung, M. (2010). An exploratory study of factors affecting adoption and implementation of B2B E-Commerce in Australian health care organizations. *International Journal of Electronic Commerce Studies*, *1* (2),77-96.

Lin, F., Fofanah, S. S., & Liang, D. (2011). Assessing citizen adoption of e-Government initiatives in Gambia: A validation of the technology acceptance model in information systems success. *Government Information Quarterly*, 28(2), 271-279.

Lin, C., Huang, Y., Stockdale, R., (2011a). Developing a B2B website effectiveness model for SMEs. *Internet Research*, *21*(3), 304 – 325.

Lin, X., Wang, Y., Wang, Y., & Ma, F. (2011b). Review of literature on factors in E-Commerce diffusion in developing countries. *In Artificial Intelligence, Management Science and Electronic Commerce (AIMSEC), 2011 2nd International Conference* (pp. 6365-6368).

Liu, M. (2008). Determinants of E-Commerce development: An empirical study by firms in Shaanxi, China. Proceedings of the *4th International Conference on Wireless Communications, Networking and Mobile Computing* (pp.1 – 4).

Liu, X., Wu, L., Yu, J., & Lei, X. (2010). A holistic governance framework for e-Business success. Proceedings of the *4th International Conference on Management of E-Commerce and e-Government (ICMeCG)* (142 – 146).

Loong, A. C. Y. (2010). Case study on the implementation of RosettaNet standards.

Lowry, P.B., Vance, A., Moody, G., Beckman, B., & Read, A. (2008). Explaining and predicting the impact of branding alliances and web site quality on initial consumer trust of E-Commerce web sites. *Journal of Management Information Systems*, *24*(4), 199–224.

Lowry, P.B., Zhang, D., Zhou, L., & Fu, X. (2009). Effects of culture, social presence, and group composition on trust in technology-supported decision-making. *Information Systems Journal,* 20(3), 297–315.

Lu, J.W., & Beamish, P.W. (2001). The internationalization and performance of SMEs. *Strategic Management Journal*, *22*(6-7), 565-586.

Lu, Y., Zhao, L., & Wang, B. (2010). From virtual community members to C2C e-commerce buyers: Trust in virtual communities and its effect on consumers' purchase intention. *Electronic Commerce Research and Applications*, 9(4), 346-360.

Lucas, H. C. (1976). The implementation of computer-based models (Vol. 919). National Association of Accountants.

Lumpkin, G.T & Dess, G.G. (2004) E-Business strategies and Internet business models: How the Internet adds value. *Organizational Dynamics*, *33*(2), 161–173.

Luna-Reyes, L.F., Gil-Garcia, J.R., & Cruz, C.B. (2007). E-Mexico: Collaborative structures in Mexican public administration. *International Journal of Cases on Electronic Commerce*, *3*(2), 54−70.

Lyytinnen, K.J & Ngwenyama, O.K (1992). What does computer support for cooperative

work mean? A structurational analysis of computer supported cooperative work. *Accounting, Management and Information Technology*, *2*(I), 13-37.

McGann, S., & Lyytinen, K. (2002). Capturing the dynamics of ebusiness models: the ebusiness analysis framework and the electronic trading infrastructure. *In 15th Annual Bled Electronic Commerce Conference*, Bled, Slovenia.

MacGregor, R.C., & Vrazalic, L. (2005). A basic model of Electronic Commerce adoption – barriers: A study of regional small businesses in Sweden and Australia. *Journal of Small Business and Enterprise Development*, *12*(4), 510-527.

Macharia, J. (2009). Factors affecting the adoption of e-commerce in SMEs in Kenya. *International Journal of Technology Intelligence and Planning*, 5(4), 386-401.

Machfud, A. K., & Kartiwi, M. (2013, March). E-commerce adoption by Indonesian small agribusiness: Reconsidering the innovation-decision process model. *In Information and Communication Technology for the Muslim World (ICT4M)*, 2013 5th International Conference on (pp. 1-6). IEEE.

Maggiolini, P., & Valles, R. S. (2012). Validity of a Model Based on Transaction Costs in Identifying the Benefits of IOS: The Electronic Data Interchange Case. *Advances in Computing*, 2(4), 60-65.

Mahadevan, B. (2000). Business models for Internet-based E-Commerce: An anatomy. *California Management Review*, *42*(4), 55-69.

Mansell, R. (2001). Digital opportunities and the missing link for developing countries. *Oxford Review of Economy Policy*, *17*(2), 282-295..

.

Martín, J. A. R. (2012). An index of child health in the least developed countries (LDCs) of Africa. *Social Indicators Research*, 105(3), 309-322.

Martinsons, M.G. (2008). Relationship-based E-Commerce: Theory and evidence from China. *Info Systems Journal*, *18*, 331–356.

Massawe, E., & Nzuki, M. (2005). *E-Business & E-Commerce solutions: Segmenting the SME Market.* Retrieved from http://www.tanzaniagateway.org/docs/ebus+ecomm_segmentingSME.pdf

Maswera, T., Dawson, R., & Edwards, J. (2008). E-commerce adoption of travel and tourism organisations in South Africa, Kenya, Zimbabwe and Uganda. *Telematics and Informatics*, 25(3), 187-200.

Matambalya, F., & Wolf, S. (2001). The role of ICT for the performance of SMEs in East Africa. Empirical evidence from Kenya and Tanzania. No.42; ZEF In *Discussion papers on development policy.* Retrieved from http://www.zef.de/fileadmin/webfiles/downloads/zef_dp/Zef-dp42.pdf

Mayer-Foulkes, D. (2005). *Institutions and long-term development policy*. Retrieved from http://www.cide.edu/investigador/documentos/david.mayer/institutionsmayer4.pdf

Mays, N., & Pope, C. (1995a). Rigour and qualitative research. British Medical Journal, *311*,109-112.

Mays, N., & Pope, C. (1995b). Qualitative research: Observational methods in health care settings. *British Medical Journal*, *311*, 182-184.

McBride, N. (2000). *Using actor-network theory to predict the organizational success of a communications network*. Retrieved from http://www.cse.dmu.ac.uk/~nkm/wtcpap.html

McDonald, A.M., & Cranor, L.F. (2008). The cost of reading privacy policies. *Journal of Law and Policy for the Information Society*, 4(3), 540-565.

McFarland, D. J., & Hamilton, D. (2006). Adding contextual specificity to the technology acceptance model. *Computers in human behavior*, 22(3), 427-447.

McGrath, K. (2005). Doing critical research in information systems: a case of theory and practice not informing each other. *Information Systems Journal, 15*(2), 85-101.

McKnight, D.H., Choudhury, V., & Kacmar, C., (2002). The impact of initial consumer trust on intentions to transact with a web site: A trust building model. Journal of *Strategic Information Systems*, *11*(3-4), 297-323.

McKnight, D.H., Kacmar, C.J., & Choudhury, V. (2004). Shifting factors and the ineffectiveness of third party assurance seals: a two-stage model of initial trust in a web business. *Electronic Markets*, *14*(3), 252-266.

Mehrtens J., Cragg P. B., & Mills A. M. (2001). A model of Internet adoption by SMEs, *Information & Management*, *39* (3), 165-176.

Menda A. *Tanzania: Government launch ICT education without training policy*. Retrieved from http://www.tanzaniagateway.org/news/news/article.asp?ID=52

Meso, P., Musa, P., & Mbarika, V. (2005). Towards a model of consumer use of mobile information and communication technology in LDCS: The case of Sub-Saharan Africa. *Journal of Information Systems 15*,119–146.

Mhina A (2000). Good governance and development in Tanzania: Some ethical issues. *Journal of Social Philosophy*, 31(4), 429–438.

Migiro, S. O. (2006). Diffusion of ICTs and E-commerce adoption in manufacturing SMEs in Kenya. *South African Journal of Library and Information Science*, 72(1), 35.

Miles, M., & Huberman, A. (1984). Qualitative data analysis: a source book for new methods. Beverly Hills: Sage Publications

Miles, M. B., & Huberman, A. M. (1991). Qualitative data analysis(3rd ed.). Newbury Park, CA: Sage

Miles MB & Huberman M. Qualitative Data Analysis: A Sourcebook of New Methods. Beverly Hills, CA: Sage Publications; 1994

Miles, M. & Huberman, A. M. (1994b). Qualitative Data Analysis: An Expanded Sourcebook. 2nd ed., Thousand Oaks, CA: Sage.

Miller D.W (2008). Facilitator effects on the process of GSS appropriation: Opening the Black Box". *Review of Business Information Systems*, *12(*4)

Mingers J. (2001). Combining IS research methods: Towards a pluralist methodology. *Information Systems Research*, *12*, 240–259.

Mingers J., & Gill, A. (1997). Towards critical pluralism. In J. (Eds). Multimethodology: theory and practice of combining management science methodologies (pp. 407-440). Chichester U.K.: Wiley.

Mingers, J. (2004). Realizing information systems: Critical realism as an underpinning philosophy for information systems. *Information and Organization*, *14* (2), 87–103.

Mlozi, S., Jing, F., & Sedoyeka, E. (2010). Technology adoption in tourism industry: A case of wireless technology (WiMAX) for Tanzania. Proceedings of the*International Conference on E-Business and E-Government*. Retrieved from http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=5590774&tag=1

Mohamed, I.S., Omar, N., Daud, N., & Marthandan, G. (2009). Assessing drivers of web technology investment in Malaysia service industry: An application of technological, organizational, and environmental model. Proceedings of the *International Conference on Information and Multimedia Technology*.

Mohamed, U. A., Galal-Edeen, G. H., & El-Zoghbi, A. A. (2010). Building an integrated B2B e-commerce hub architecture based on SOA and semantic ontology. *Journal of Enterprise Information Management*, 23(6), 775-812.

Mole, K.F., & Mole, M. (2010). Entrepreneurship as the structuration of individual and opportunity: A response using a critical realist perspective; Comment on Sarason, Dean and Dillard. *Journal of Business Venturing .25*, 230–237.

Molla, A. & Licker, P.S. (2005). E-Commerce adoption in developing countries: A model and instrument. *Information & Management*, *42*, 877–899.

Molla, A., & Licker, P. S. (2005). Perceived e-readiness factors in e-commerce adoption: an empirical investigation in a developing country. *International Journal of Electronic Commerce*, 10(1), 83-110.

Molla, A., & Heeks R., (2007). Exploring e–commerce benefits for businesses in a developing country.*Information Society*, *23*(2), 95–108.

Molla, A., Taylor, R., & Licker, P.S. (2006). E-Commerce diffusion in small island countries: The influence of institutions in Barbados. *The Electronic Journal on Information Systems in Developing Countries*, *28*(2), 1-15.

Molony, T. (2008). The role of mobile phones in Tanzania's informal construction sector: The case of Dar-es-Salaam. Urban Forum Journal, *19*(2), 175-186.

Montealegre, R. (1997). The interplay of information technology and the social milieu. *Information Technology & People*, *10*(2), 106 –131.

Moore, D.R.J. (2011). Structuration theory: The contribution of Norman Macintosh and its application to emissions trading. *Critical Perspectives on Accounting*, *22*, 212–227.

Morais, E. P., Pires, J. A., & Gonçalves, R. M. (2012). E-business maturity: constraints associated with their evolution. *Journal of Organizational Computing and Electronic Commerce*, 22(3), 280-300.

Morse J.M. & Field P.A. (1995) Qualitative Research Methods for Health Professionals. Sage Publications, Thousands Oaks, CA.

Muir, A., & Oppenheim, C. (2002). National information policy developments worldwide III: E-Commerce. *Journal of Information Science*, *28*, (95),357-373.

Mukti, N.A. (2000). Barriers to putting businesses on the Internet in Malaysia. *The Electronic Journal of Informanformation Systems in Developing Countries*, *2*. Retrieved from http://www.ejisdc.org/Ojs2/index.php/ejisdc/article/viewFile/11/11

Musa, P.F., Meso, P., & Mbarika, V.W. (2005). Toward sustainable adoption of technologies for human development in sub-Saharan Africa: Precursors, diagnostics, and prescriptions. *Communications of Association of Information Systems,15* (33), 1-31.

Musawa, M. S., & Wahab, E. (2012). The adoption of electronic data interchange (EDI) technology by Nigerian SMEs: A conceptual framework. *Journal of Business Management and Economics*., 3(2), 055-068.

Mussa, S.M., & Kihongo, V. (2011). Prospects and challenges of corporate bonds financing in Tanzania. *Asian Journal of Business Management*, 3(3): 178-187.

Must, B., & Ludewig, K. (2010). Mobilemoney: Cell phone banking in developing countries. *Policy Matters Journal*, 27-33.

Mwangi, W. (2006). The social relations of e-government diffusion in developing countries: the case of Rwanda. *In Proceedings of the 2006 international conference on Digital government research* (pp. 199-208). Digital Government Society of North America.

Myers, M.D., & Newman, M. (2007). The qualitative interview in IS research: Examining the craft. *Information and Organization*, *17*(1), 2-26.

Nakamura, A. (2010). Estimating switching costs involved in changing mobile phone carriers in Japan: Evaluation of lock-in factors related to Japan's SIM card locks. *Telecommunications Policy*, 34(11), 736-746.

Narayanan, S., Marucheck, A.S. & Handfield, R.B. (2009), Electronic data interchange: research review and future directions. *Decision Sciences*, *40*, 121–163.

Nelson, E.G. & De Bruijn, E.J. (2005). The voluntary formalization of enterprises in a developing economy: The case of Tanzania. Journal of International Development, *17*, 575–593.

Ngai, E.W.T., & Wat, F.K.T. (2002). A literature review and classification of electronic commerce research. *Information & Management*, *39*, 415-429.

Ngowi, H.P (2009). Economic development and change in Tanzania since independence: The political leadership factor. *African Journal of Political Science and International Relations*, *3*(4), 259-267.

Ngwenyama, J.O., & Lee, A.S. (1997). Communication richness in electronic .mail: Critical social theory and the contextuality of meaning. *MIS Quarterly*, *21*(2), 145-167

Nielinger, O. (2003). Fact Sheet: ICT-utilisation of small and medium enterprises (SME) in Tanzania. Retrieved from http://www.ourtanzania.com/smes%20ICT%20utilisation.pdf

Nkya, E.J. (2003). Institutional barriers to small-scale business development: A need for flexibility in Tanzanian tax and regulatory system. *The Journal of Entrepreneurship*, *12*,(1), 43-73.

Nnafie, I. (2002). *Internet cafés in Dar-Es-Salaam: Problems and opportunities*. Eindhoven: University of Technology, Faculty of Technology Management.

Noronha, V.F (2002). ICT lessons from Africa: A South-South report. *Bulletin von Medicus Mundi Schweiz* Nr. 85. Retrieved from http://www.medicusmundi.ch/mms/services/bulletin/bulletin200202/kap01/05noronha.html

Ntawanga, F., Calitz, A., & Barnard, L. (2011, October). The comparison of an e-commerce website implementation using service and Object Oriented architectures. *In Pervasive Computing and Applications (ICPCA), 2011 6th International Conference on* (pp. 356-362). IEEE.

Nurmilaakso, J. M. (2008). EDI, XML and e-business frameworks: A survey. *Computers in Industry*, 59(4), 370-379.

Nyangosi, R., Arora, J. S., & Singh, S. (2009). The evolution of e-banking: a study of Indian and Kenyan technology awareness. *International Journal of Electronic Finance*, 3(2), 149-165.

Nyerere, J.K. (1967).*The Arusha Declaration: A declaration outlining Tanzania's policy on socialism and self-reliance.freedom and development*. Retrieved from http://www.ntz.info/gen/b00524.html#id03205

O'Callaghan, R., & Eistert, T. (1995). An association's leadership for industry-wide EDI: The case of AECOC in Spain. In H.Krermar, N, Bjorn-Andersern & R.O' Callaghan (Eds), *EDI in Europe: How it works in practice* (pp. 277-297). Chichester, UK: John Wiley.

Ogden, D., & Rose, R.A. (2005). Using Giddens's structuration theory to examine the waning participation of African Americans in baseball. *Journal of Black Studies*, *35*(4), 225-245.

Ogunyem, O. (2006). *Legal and regulatory environment for electronic trade*. UN Economic Commission for Africa Forum on ICTs, Trade and Economic Growth Presentation Addis Ababa, Ethiopia 14 March, 2006.

Oh, W. (2002). C2C versus B2C: A comparison of the winner's curse in two types of electronic auctions. International Journal of Electronic Commerce. *6* (4), 115-138.

O'hEocha, C., Wang, X., & Conboy, K. (2012). The use of focus groups in complex and pressurised IS studies and evaluation using Klein & Myers principles for interpretive research. *Information Systems Journal*, 22(3), 235-256.

Ojukwu, D. (2006), "Achieving sustainable growth through the adoption of integrated business and information solutions: a case study of Nigeria small and medium sized enterprises", *Journal of Information Technology Impact*, Vol. 6 No. 1, pp. 47-60.

Ojukwu, D., Georgiadou, E., & House, R. (2007)). Towards improving inter-organisational trust amongt SMEs: A case study from developing countries. Proceedings of the *9th IFIP International Conference on the Social Implications of Computers in Developing Countries*. Retrieved from http://www.ifipwg94.org.br/fullpapers/R0096-1.pdf

Okoli, C., Mbarika, V. W., & McCoy, S. (2010). The effects of infrastructure and policy on e-business in Latin America and Sub-SaharanAfrica. *European Journal of Information Systems*, 19(1), 5-20.

Oreku, G. S., Jiangzhong, L., & Mtenzi, F. J. (2007, October). Feasibility study for ecommerce and ICT diffusion-adoption in EAC. *In Communications and Information Technologies*, 2007. ISCIT'07. International Symposium on (pp. 1297-1302). IEEE.

Oreku, G.S., Li, J., Kimeli, K., & Mtenzi, F.J. (2009). State of Tanzania E-Readiness and E-Commerce: Overview. *Information Technology for Development*, *15*(4), 302-311.

Orlikowski, W. (1992). The duality of technology: Rethinking the concept of technology in organizations, *Organization Science*, *3*(3), 398-427.

Orlikowski, W.J. (2000). Using technology and constituting structures: A practice lens for studying technology in organizations. *Organization Science*, *11*(4), 404.

Orlikowski, W.J., & Robey, D. (1991) Information technology and the structuring of organizations, *Information Systems Research*, *2*(2), 143– 169.

Othman, M.F., Iskandar, C., Taizan, F., Ernest, N.K.J., & Timbrell, G.T. (2010) Barriers to information technology governance adoption: a preliminary empirical investigation. In K.S.Soliman, S. (Ed.*) Proceedings of 15th International Business Information Management Association Conference* (pp. 1771-1787).Cairo, Egypt.

Oyelaran-Oyeyinka, B. & Lal, K. (2006). Internet diffusion in Sub-Saharan Africa: A cross-country analysis. *Telecommunications Policy*, 29, 507–527.

Oz, E. (1992). Ethical standards for information systems professionals: A case for a unified code. *MIS Quarterly*, 423-433.

Panagariya, A. (2000). E-Commerce, WTO and developing countries. *The World Economy*, 23(8), 959-978.

Panayiotou, N.A., Gayialis, S.P., & Tatsiopoulos, P. (2004). An E-Procurement system for governmental purchasing. *International journal of production economics*, 90 (1), 79-102.

Pare, J.D. (2002). *B2B E-Commerce services and developing countries*: *Disentangling myth from reality*. Retrieved from http://www.ids.ac.uk/userfiles/file/globalisation_team/draftaoir3.pdf

Park, C., & Jun, J. (2003). A cross-cultural comparison of Internet buying behavior effects of Internet usage, perceived risks, and innovativeness. *International Marketing Review*, *20*(5), 534-553.

Parker, D. (1995). Privatization and the internal environment developing our knowledge of the adjustment process. *International Journal of Public Sector Management*, *8*(2), 44-62.

Pateli, A.G., & Giaglis, G.M (2003). A framework for understanding and analysing EBusiness models. Proceedings of the *16th BLED E-Commerce Conference E-transformation*. Bled, Slovenia, June 9 -11, 2003.

Pavlou, P.A. (2002). Institution-based trust in interorganizational exchange relationships: The role of online B2B marketplaces on trust formation. *Journal of Strategic Information Systems, 11*,215–243.

Pawlowski, S.D., & Robey, D. (2004). Bridging user organizations: Knowledge brokering and the work of information technology professionals. *MIS Quarterly*,*28*(4), 645-672.

PCTECH Magazine (2013). Tanzania Not Yet Ready To Use Tech To Boost Competitiveness. Retrieved from http://pctechmag.com/2013/05/tanzania-not-yet-ready-to-use-tech-to-boost-competitiveness/ Date accessed 16 August 2013

Peansupap, V., & Walker, D.H.T. (2005). Factors enabling Information and Communication Technology diffusion and actual implementation in construction organizations. *ITcon*, *10*,193-218.

Pentland, B.T., & Feldman, M.S. (2007). Narrative networks: Patterns of technology and organization. *Organization Science*, *18*(5), 781-795.

Petrazzini, B., & Kibati, M. (1999). The Internet in developing countries. *Communications of the ACM*, *42* (6), 31-- 36.

Pham L., & Nguyen, D. (2010). Small and medium sized enterprises' E-Commerce adoption model in Vietnam. *Proceedings of the Academy of Information and Management Sciences*, (2),18-22.

Philip, A., Oluwatolani, O., & Joshua, A. (2011). Development of a Window Based Security System for Electronic Data Interchange. arXiv preprint arXiv:1108.1154.

Pigato, M. (2000). Foreign direct investment in Africa: Old tales and new evidence, Washington DC: World Bank.-

Pigato, M. (2001). Information and communication technology, poverty, and development in Sub- Saharan Africa and South Asia. Africa Region Working Paper Series, 20.

Po, C.C., Fong, S., & Lei, P. (2007). On designing an efficient and secure card-based payment system based on ANSI X9.59-2006. Proceedings of the *IEEE International Workshop on Anti-Counterfeiting, Security, Identification*. Xiamen, Fujian, 16-18 April 2007 (pp.427 – 430).

Pool, M.S. (2009). Response to Jones and Karsten, "Giddens's Structuration Theory and Information Systems Research". *MIS Quarterly*, *33*(3), 583-587.

Porpora, D.V. (1998). Four concepts of social structure. In M. Archer, R. Bhaskar, A. Collier, T. Lawson, and A. Norrie (Eds). *Critical realism: Essential readings* London: Routledge.

Posthumusa, S., & von Solms, R. (2005). IT oversight: An important function of corporate governance. *Computer Fraud & Security*, (6), 11-17.

Pozzebon, M., (2000). Combining a structuration approach with a behavioural-based model to investigate ERP Usage. *Proceedings of the Americas Conference on Information Systems, 124*.

Pozzebon, M., & Pinsonneault A. (2001). Structuration theory in the IS field: An assessment of research strategies. *Global Co-Operation in the New Millennium*: *the 9th European conference on information systems B*led, Slovenia, June 27-29, 2001.

Pozzebon, M., & Pinsonneault, A. (2005). Challenges in conducting empirical work using structuration theory: Learning from IT research. *Organization Studies*, 26(9), 1353-1376.

Priestley, M. (2011). Whatever happened to curriculum theory? Critical realism and curriculum change. *Pedagogy, Culture & Society*, *19*(2), 221-237.

Purchase S. & Dooley K. (2010). The acceptance and use of e-procurement systems. *International Journal of Logistics: Research and Applications*, *13*(6), 459–473.

Rai, A., Brown, P., & Tang, X. (2009). Organizational assimilation of electronic procurement innovations. *Journal of Management Information Systems*, *26*(1), 257-296.

Ramdani, B., Kawalek, P., & Lorenzo, O. (2009). Predicting SMEs adoption of enterprise systems. *Journal of Enterprise Information Management*, *22*(1/2), 10-24.

Rappa, M. (2000). Managing the digital enterprise. Retrieved from: http://ecommerce.ncsu.edu/business models.html.

Raymond, L. & Blili, S. (1997). Adopting EDI in a network enterprise: The case of subcontracting SMEs. European Journal of Purchasing & *Supply Management*, 3(3), 165-175.

Rayport, J.F., & Jaworski, B.J. (2001). *E-Commerce*. New York: McGraw-Hill/Irwin.

Reed, M. I. (1997). In praise of duality and dualism: Rethinking agency and structure in organizational analysis. *Organization Studies*, 18(1), 21–42.

Rice, P., & Ezzy, D. (1999). *Qualitative research methods: a health focus*. Melbourne: Oxford University Press.

Richards A.K. (2006). Customer relationship management: Finding value drivers. *Industrial Marketing Management*, 37(2), 120–130.

Riessman, C. K., Huberman, A. M., & Miles, M. B. (2002). Narrative analysis. *The qualitative researcher's companion*, 217-270.

Rigopoulos, G. (2007) A TAM framework to evaluate users' perception towards online electronic payments. *Journal of Internet Banking and Commerce*, *12*(3).

Riyadh, A.N., Akter, S., & Islam, N. (2009). The adoption of E-banking in developing countries: A theoretical model for SMEs. *International Review of Business Research*, *5(*6), 212-230.

Roberts, J., & Scapens, R. (1985). Accounting systems and systems of accountability—understanding accounting practices in their organisational contexts. *Accounting, Organizations and Society*, *10*(4), 443-456.

Rodriguez-Ardura I., Meseguer-Artola, A., & Vilaseca-Requena, J. (2008). Factors influencing the evolution of electronic commerce: an empirical analysis in a developed market economy. *Journal of Theoretical and Applied Electronic Commerce Research*, *l3*(2) 18-29.

Rogers E. (2003). The Diffusion of Innovations. Fifth Edition. The Free Press, New York

Rong, D., & Ye, S. (2011). Study on the early-warning of manufacturing SMEs' supply chain risk based on B2B. *International Conference on Cusiness Management and Electronic Information*, *4*, 439-442.

RosettaNet, 2008. How does RosettaNet differ from other standards efforts? /http://www.rosettanet.org/cms/sites/RosettaNet/About/FAQ/modules/faq/faq_0007.html

Rose, J. (1998). Evaluating the contribution of structuration theory to the information systems discipline. In *6th European Conference on Information Systems*, Granada.

Rose, J., & Hackney, R. (2003). Towards a structurational theory of information systems: a substantive case analysis. *Proceedings of the 36th Hawaii International Conference on System Sciences*.

Rose, J., & Lewis, P. (2001). Using structuration theory in action research: An intranet development project. In L. Russo, B. Fitzgerald, and J.I. DeGross (eds). *Realigning research and practice in information systems development: The social and organisational perspective* (pp. 273-296). Dordrecht Kluwer Academic.

Rose, J., & Scheepers, R. (2001). Structuration theory and information system development: Frameworks for practice. *Proceedings of the 9th European Conference on Information Systems*, Retrieved from http://folk.uio.no/patrickr/refdoc/rose-structuation.pdf

Rose, J., & Jones, M. (2005). The double dance of agency: A socio-theoretic account of how machines and humans interact. *Systems, Signs & Actions*, 1(1), 19-37.

Rose, J., Jones, M., & Truex, D. (2005). Socio-theoretic accounts of is: the problem of agency. *Scandinavian journal of information systems*, 17(1), 133.

Rossi, A. & Zamarian, M. (2006). Designing, producing and using artifacts in the structuration of firm processes ofsoftware development. *ROCK Working Papers*, XXII EGOS Colloquium, Bergen.

Rotchanakitumnuai, S., & Speece, M. (2003). Barriers to Internet banking adoption: A

qualitative study among corporate customers in Thailand. *International Journal of Bank Marketing*, *21*(6/7), 312–323.

Russell, A. W., Vanclay, F. M., & Aslin, H. J. (2010). Technology assessment in social context: The case for a new framework for assessing and shaping technological developments. *Impact Assessment and Project Appraisal*, 28(2), 109-116.

Sagi, J., Carayannis, E., Dasgupta, S., & Thomas, G. (2004). ICT and business in the new economy: Globalization and attitudes towards E-Commerce. *Journal of Global Information Management*, *12* (3), 44.

Salacuse, J. W. (2004). Negotiating: The top ten ways that culture can affect your negotiation. *Ivey Business Journal*, *69*(1), 1-6.

Salacuse, J.W. (1998). Ten ways that culture affects negotiating style: Some survey results. *Negotiation Journal*, *14*, 221–240.

Salwani, M.I., Marthandan, G., Norzaidi, M.D., & Chong, S.C. (2009). E-Commerce usage and business performance in the Malaysian tourism sector: Empirical analysis. *Information Management & Computer Security*, *17*(2), 166-185.

Sandberg, K.W. (2003). An exploratory study of women in micro enterprises: gender related difficulties. *Journal of Small Business and Enterprise Development*,*10*(4), 408-417.

Sarasona, Y., Dean, T. & Dillard, J.F. (2006). Entrepreneurship as the nexus of individual and opportunity: A structuration view. *Journal of Business Venturing*, *21*, 286–305.

Sawe, D. and Simbo, N. (2002). *Proposal for Tanzania's ICT Policy Formulation Framework*: *Final version 2.3*

Scholl, H.J., Barzilai-Nahon, K., Ahn J., Popova O.H, & Re, B. (2009). E-Commerce and

E-Government: How do they compare? What can they learn from each other? *Proceedings of the 42nd Hawaii International Conference on System Sciences*.

Schware, R. (2005). E-Development: From excitement to effectiveness. Prepared for the World Summit on the Information Society, Tunis November 2005. Global Information and Communication Technologies Department. The World Bank Group.

Scupola, A. (2009). SMEs' E-Commerce adoption: Perspectives from Denmark and Australia. *Journal of Enterprise Information Management*, *22*(1-2).SEACOM (2012) *Building the African Internet*. Retrieved from http://www.seacom.mu/

Senzige, J.P., & Sarukesi, K. (2003). An approach to ICT-based school education in Tanzania. The Institute of Fnance Management, Tanzania. African Studies Association of Australasia and the Pacific. *Conference proceedings*. Retrieved from http://www.afsaap.org.au/conferences/2003/senzige.pdf

Shang, S. S., Wu, Y. L., & Hou, O. C. (2009).An analysis of business models of Web 2.0 application. *Information Technology*: *New Generations*. (pp. 314-319. ITNG'09. Sixth International Conference.

Shapiro, C., & Varian, H. R. (1999). Information rules: A strategic guide to the network economy. Boston, MA: Harvard Business School Press.

Sharma,U., Barnett, J. & Clarke, M (2012). Using concepts from structuration theory and consequence of modernity to understand IS deployment in health-care setting. InY.K. Dwivedi et al. (Ed) *Information Systems Theory*: *2*(29), 131-142.

Shemi, A., & Proctor, C. T. (2013). Challenges of E-Commerce Adoption in SMEs: An Interpretive Case Study of Botswana. *Botswana Journal of Business*, 6(1), 17-30.

Shiels, H., McIvor, R., & O'reilly, D. (2003). Understanding the implications of ICT adoption: **I**nsights from SME**S.** *Journal of Enterprise Information Management, 16***(5),**312-326.

Shiguo, L., Dimitris, K., & Giancarlo, R. (2009). Recent advances in multimedia information system security. *Informatica*, *33* (1), 3-24.

Shim, S. S., Pendyala, V. S., Sundaram, M., & Gao, J. Z. (2000). Business-to-business e-commerce frameworks. *Computer*, 33(10), 40-47.

Sia, C.L., Lim, K.H., Leung, K., Lee, M.K.O., Huang, W.W., & Benbasat, I. (2009). Web strategies to promote internet shopping: Is cultural-customization needed? *MIS Quarterly*, *33*(3), 491-512.

Sila, I., & Dobni, D. (2012). Patterns of B2B e-commerce usage in SMEs. *Industrial Management & Data Systems*, 112(8), 1255-1271.

Simmons, G., Armstrong, G.A., & Durkin, M.G. (2008). A conceptualization of the determinants of small business website adoption: Setting the research agenda. *Internationa*l *Journal of Small Business, 26* (351).

Singh, A.M. (2004). Trends in South African internet banking. *ASLIB Proceedings: New Information Perspectives*, *56*(3), 187-196.

Singh, S., & Sidhu, J. (2013). A Survey of XML-based Security Standards for Handling Security Requirements of Grid and Cloud. *International Journal of Engineering and Technology*.

Singh, N., Baack, D. W., Kundu, S. K., & Hurtado, C. (2008). US Hispanic consumer E-Commerce preferences: Expectations and attitudes toward web content. *Journal of Electronic Commerce Research*, *9*(2), 162-175.

Sinha, C. (2005). Effect of mobile telephony on empowering rural communities in developing countries. *International Research Foundation for Development Conference on Digital Divide*, Global Development and the Information Society, November 14-16.

Stafford, T.F. & Gillenson, M.L. (2003). Mobile commerce: What it is and what it could be. *Communications of the ACM*,46 (12), 33-34.

Steinerowski, A., & Steinerowska-Streb I. (2012). Can social enterprise contribute to creating sustainable rural communities? Using the lens of structuration theory to analyse the emergence of rural social enterprise. *Local Economy*, *27*(2), 167–182.

Stockdale, R., & Standing, C. (205). An interpretive approach to evaluating information systems: A content, context, process framework. *European Journal of Operational Research*, *173*, 1090–1102.

Strader, T.J. & Ramaswami, S.N. (2002). The value of seller trustworthiness in C2C online markets. *Communications of ACM* 45(12), 45-49.

Su, Q., Song, T., & Chen, T. (2006). Conceptualizing consumers' perceptions of e-commerce quality. International *Journal of Retail & Distribution Management*, *36*(5), 360-374.

Sydow, J., & Windeler, A. (1998). Organizing and evaluating interfirm networks: A structurationist perspective on network processes and effectiveness. *Organization Science*, 9(3), 265-284.

Tai, Y.M (2011). Exploring the performance impact of web-based direct procurement systems: from the perspective of process integration. *WSEAS Transactions on Information Science and Applications*, *8*(9), 380-390.

Tan, H., Wilson, A., & Olver, I. (2009). Ricoeur's theory of interpretation: An instrument for data interpretation in hermeneutic phenomenology. *International Journal of Qualitative Methods*, *8*(4), 1-15.

Tan, K.C., Kannan, V.R., Hsu, C., & Leong, G. K. (2010). Supply chain information and relational alignments: Mediators of EDI on firm performance. *International Journal of Physical Distribution & Logistics Management*, *40*(5), 377 – 394

Tan, W., Cater-Steel A., & Toleman, M. (2009). Implementing IT service management: A case study focusing on critical success factors. *Journal of Computer Information Systems*. Retrieved from http://iacis.org/jcis/articles/Tan_CaterSteel_Toleman_50_2.pdf

Tanzania. Communications Regulatory Authority (TCRA) (2010). Report on Internet and data services in Tanzania. Retrieved from http://www.tcra.go.tz/publications/internetdatasurveyscd.pdf

Tanzania. Ministry of Industry and Trade (2002). *Small and medium enterprise development policy*.

Tanzania. *National ICT Policy of Tanzania* (2002). Retrieved from http://www.ethinktanktz.org/esecretariat/DocArchive/zerothorder.pdf

Tekin, R. B. (2012). Economic growth, exports and foreign direct investment in Least Developed Countries: A panel Granger causality analysis. *Economic Modelling*, 29(3), 868-878.

Teo T.S.H., Lin S., & Lai K. (2009). Adopters and non-adopters of e-procurement in Singapore: An empirical study. *Omega*, *37*, 972-987.

Teo, T.L., Chan, C. & Parker, C. (2004). Factors affecting E-Commerce adoption by SMEs: A Meta-Analysis. *Australasian Proceedings Association for Information Systems*, Paper 54.

Thomas, D.R. (2003). A general inductive approach for qualitative data analysis. Retrieved from http://www.fmhs.auckland.ac.nz/soph/centres/hrmas/_docs/inductive2003.pdf

Toma, J. D. (2000). How getting close to your subjects makes qualitative data better. *Theory into Practice*, 39(3), 177-184.

Travica, B. (2002). Diffusion of Electronic Commerce in developing countries: The case of Costa Rica. *Journal of Global Information Technology Management*, *5*(1), 4-24.

Travica, B., & Olson, R. (1998). Web as global virtual library: Usability of business sites in East and Central Europe. In *Proceedings of the ASIS Annual Meeting*, *35*, 227-42.

Tregurtha, N., & Vink, N. (2002). B2B e-commerce and the South African Horticultural Export industry: current status and future directions. Report for Globalisation and Poverty Programme-Trade, Production and Poverty.

Tsai, Y.J., Egelman, S., Cranor, L., & Acquisti, A. (2011). The effect of online privacy information on purchasing behavior: An experimental study. *Information Systems Research*, *22* (2), 254–268.

Tse, D.K., Francis, J., & Walls, J. (1994). Cultural differences in conducting intra - and inter-cultural negotiations: A Sino-Canadian comparison. *Journal of International Business Studies*, *25*(3), 537-555.

Tveit, A. (2001). Peer-to-peer based recommendations for mobile commerce. *Proceedings of the ACM*, 26-29.

Tznews (2007). Academics yesterday criticized the government over high-profile graft, excessive donor dependency and increased economic imbalances between the haves and have nots.Retrieved from http://joe-tznews.blogspot.com/a2007_10_15_archive.html

Umussaa'dah Adam, M. I. D., & Tan, M. I. I. (2012). A Review on Factors Affecting The Edi System Migration In Logistic. *IJCSI International Journal of Computer Science* Issues, Vol. 9, Issue 2, No 1, March 2012

UNCITRAL model law on electronic signatures with guide to enactment, 2002. Retrieved from http://www.uncitral.org/pdf/english/texts/electcom/ml-elecsig-e.pdf

UNCTAD. (2002). UN recognition of the Least Developed Countries. 2002. Retrieved from http://www.unctad.org/templates/page.asp?intitemid=3618&lang=1

UNCTAD, 2010. The Least Developed Countries Report 2010: Towards a New International Development Architecture for LDCs. United Nations, Geneva and New York

Uzoka, F.E. & Seleka, G.G. (2006). B2C E-Commerce development in Africa: Case study of Botswana. *Proceedings of the 7th ACM conference on Electronic Commerce*, June 11–15, 2006 (pp.291-295). Ann Arbor, Michigan, USA.

Uzoka, F.E., Shemi, A.P., & Seleka, G.G. (2007). Behavioural influences on E-Commerce adoption in a developing country context. *The Electronic Journal on Information Systems in Developing Countries*, *31*(4), 1-15.

Uzoka, F.W. (2008). Organisational influences on E-Commerce adoption in a developing country context using UTAUT. *International Journal of Business Information Systems*,3(3), 300-316.

Vaast, E., & Walsham, G. (2005). Representations and actions: The transformation of work practices with it use. *Information and Organization*, 15, 65–89.

Van Akkeren, J.K. & Cavaye, M.A.L. (1999). Confusion with diffusion? Unraveling IS diffusion and innovation literature with a focus on SMEs.*Australasian Journal of Information Systems* 7(1).

Van Huy, L., Rowe, F., Truex, D., & Huynh, M. Q. (2012). An empirical study of determinants of e-commerce adoption in SMEs in Vietnam: An economy in transition. *Journal of Global Information Management (JGIM)*, 20(3), 23-54.

Van Slyke, C., Bélanger, F., Johnson, R. D., & Hightower, R. (2010). Gender-based differences in consumer ecommerce adoption. *Communications of the Association for Information Systems*, *26* (2).

Von Krogh, G., & Haefliger, S. (2010). Opening up design science: The challenge of designing for reuse and joint development. *The Journal of Strategic Information systems*, *19*(4), 232–241.

Votis, K., Alexakos, C., Vassiliadis, B., & Likothanassis, S. (2008). An ontologically principled service-oriented architecture for managing distributed e-government nodes. *Journal of Network and Computer Applications*, 31(2), 131-148.

Walsham, G., Symons, V. and Waema, T. (1988). Information Systems as Social Systems: Implications for Developing Countries, *Information Technology for Development*, vol. 3, no. 3, 189-204.

Walsham, G., & Han, C.K. (1991). Structuration theory and information systems research. *Journal of Applied Systems Analysis*, *17*, 77-85.

Walsham, G., & Han, C.K. (1993). Information systems strategy formation and implementation: The case of a central government agency. *Accounting, Management and Information Technologies*, *3(*3), 191-209.

Walsham, G., & Waema, T. (1994). Information systems strategy and implementation: A case study of a building society. *ACM Transactions on Information Systems*, *12*(2), 150-173.

Walsham, G. (1995). Interpretive case studies in IS research: Nature and method. *European Journal of Information Systems*, *4*(2), 74-81.

Walsham, G. (2006). Doing interpretive research. *European journal of information systems*, 15(3), 320-330.

Wang, H., Zhu, Q., Shen J., & Cao, S. (2010). Web service based design for rural industry by the local government. *International Conference on Multimedia Information Networking and Security*. Retrieved from http://signals.hyit.edu.cn/papers/MINES%202010.pdf

Wang, Y.S., Wang, Y.M., Lin, H.H., & Tang, T., (2003). Determinants of User Acceptance of Internet Banking: An Empirical Study. *International Journal of Service Industry Management*, *14*(5), 501-519

Wang, H., & Hu, Q. (2009, September). Research and Application of an Integration Platform for E-Commerce System Based on SOA. In Management of e-Commerce and e-Government, 2009. *ICMECG'09. International Conference* on (pp. 424-427). IEEE.

Wang, W., & Benbasat, I. (2008). Attributions of trust in decision support technologies: a study of recommendation agents for E-Commerce. *Journal of Management Information Systems*, *24*(4), 249-273.

Wang, H. L., & Cen, Y. (2013). Implementation of Information Integration Platform in Chinese Tobacco Industry Enterprise Based on SOA. *Proceedings of the 2nd International Conference On Systems Engineering and Modeling* (ICSEM-13)

Wang, T., & Lin, Y. (2009). Accurately predicting the success of B2B E-Commerce in small and medium enterprises. *Expert Systems with Applications*, *36*(2), 2750–2758.

Warden, S., & Motjolopane, I. M. (2007). E-Commerce adoption factors: Supporting cases from South Africa. *In Information Resource Management Association Conference* (pp. 1-6).

Webster, J. (1995). Networks of collaboration or conflict? Electronic Data Interchange and power in the supply chain. *Journal of Strategic Information Systems*, 4(1) 31-42.

Weerakkody, V., Dwivedi, Y. K., Brooks, L., & Williams, M. D. (2007). E-government implementation in Zambia: contributing factors. *Electronic Government, an International Journal*, 4(4), 484-508

Whittington, R., Jarzabkowski, P., Mayer, M., Mounoud, E., Nahapiet, J., & Rouleau, L. (2003). Taking Strategy Seriously Responsibility and Reform for an Important Social Practice. *Journal of Management Inquiry*, 12(4), 396-409.

Williams, G.H. (2003). The determinants of health: Structure, context and agency. *Sociology of Health & Illness*, *2*(3), 131–154

Willmott, H. (1981). The structuring of organizational structure: A note. *Administrative Science Quarterly*, *26*(3), 470-474.

Wilson, E.J., & Wong, K. (2003). African information revolution: A balance sheet. *Telecommunications Policy*, *27*, 155–177.

Wilson, H., Daniel, E. & Davies, I. (2008). The diffusion of E-Commerce in UK SMEs. *Journal of Marketing Management*, 24(5-6), 489–516.

Wilson, M. (2003). Understanding the international ICT and development discourse: Assumptions and implications, *The Southern African Journal of Information and Communication*, (3).

Windrum, P., & de Berranger, P. (2002). The adoption of e-business technology by SMEs. MERIT-Infonomics Research Memorandum series. Retrieved from http://arno.unimaas.nl/show.cgi?fid=205.

Wirtz, B.W., & Lihotzky, N. (2003). Customer retention management in the B2C Electronic Business. *Long Range Planning*, 36, 517–532.

Wirtz, B.W., Schilke, O., & Ullrich, S. (2010). Strategic development of business models implications of the Web 2.0 for creating value on the Internet. *Long Range Planning*, *43*, 272-290.

Wolf, S. (2001). Determinants and impact of ICT use for African SMEs: Implications for rural South Africa. Center for Development Research (Zef Bonn). Paper Prepared For Tips Forum 2001.

Woodgate, G., & Redclift, M., (1998). From a 'sociology of nature' to environmental sociology: Beyond social construction. *Environmental Values*, *7*, 3-24.

Worku, G. (2010). Electronic-banking in Ethiopia: Practices, opportunities and challenges. *Journal of Internet Banking and Commerce*, *15*, (2).

Wu, F., Mahajan, V., & Balasubramanian, S. (2003). An analysis of e-business adoption and its impact on business performance. *Journal of the Academy of Marketing Science*, *31*(4), 425-447.

Xin, Y., & Zhiguang, W. (2010, April). Research on Logistics System Architecture Based on SOA. *In Intelligent Information Technology and Security Informatics* (IITSI), 2010 Third International Symposium on (pp. 763-766). IEEE.

Xu, X. (2008). Effects of two national environmental factors on E-Commerce functionality adoption: A cross-country case study of a global bank. *Enterprise Information Systems*, *2*(3).

Yan, P., & Guo, J. (2010). Researching and Designing the Architecture of E-government Based on SOA. *In E-Business and E-Government (ICEE), 2010 International Conference on* (pp. 512-515). IEEE.

Yan, L., Miao, L., & Jianwei, H. (2010). Airline Cost Control Based on E-commerce. In Information Management, Innovation Management and Industrial Engineering (ICIII), *2010 International Conference on* (Vol. 1, pp. 571-573). IEEE.

Yang, G. (2012). Relationships between E-Commerce and supply chain management. In H. Kim (Ed.). *Advances in technology and management* (pp. 653–658). London: Springer.

Ye, Q., Xu, M., Kiang, M., Wu, W., & Sun, F. (2013). In-depth analysis of the seller reputation and price premium relationship: a comparison between eBay US and Taobao China. *Journal of Electronic Commerce Research*, 14(1).

Yoon, C. (2009). The effects of national culture values on consumer acceptance of E-Commerce: online shoppers in China. *Information & Management*,46 (5), 294–301.

Yu, C., Lu, J., & Dong, X. (2010). Adoption of E-Commerce strategy in a private SME in China. *International Conference on Advanced Management Science*, *2*, 1 -5.

Zandi, F. (2013). A Country-Level Decision Support Framework for Self-Assessment of E-Commerce Maturity.

Zhai, C. (2011). Study on environment factors affecting B2B e-marketplace adoption in China: From e-readiness perspective. *International Conference on Computer Science and Service System (CSSS)*, 4062-4065, 27-29 June 2011.

Zhang, Y., Fang, Y., Wei, K., Ramsey, E., McCole, P., & Chen, H. (2011). Repurchase intention in B2C E-Commerce: a relationship quality perspective. *Information & Management, 48*, 192–200.

Zhao, J., Wang, S., & Huang, V. W. (2008). A study of B2B E-Market in China: E-Commerce process perspective. *Information & Management*, *45*, 242–248.

Zheng, H., Liu, L., & Li, Y. (2009). An information fusion-enabled third party e-commerce platform based on SOA. *Journal of Software,* 4(1), 50-57.

Zhu, K., & Kraemer, K.L (2005). Post-adoption variations in usage and value of E-Business by organizations: Cross-country evidence from the retail industry. *Information Systems Research*, *16* (1), 61–84.

Zhu, L., & Thatcher, S.M. (2010). National information ecology: A new institutional economics perspective on global E-Commerce adoption. *Journal of Electronic Commerce Research*, *11*(1)53.

Zott, C., Amit, R & Donlevy, J. (2000). Strategies for value creation in E-Commerce: Best practice in Europe. *European Management Journal*, *18*(5),463–475.

Zott, C., Amit, R., & Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management 37*, 1019.

Zubi, Z. S. (2010). Using text mining techniques in electronic data interchange environment. *WSEAS Transactions on Computers*, 9(8), 832-846.

APPENDIX 1: QUANTITATIVE RESEARCH INSTRUMENT

For each of the following statements, please select the response you feel most appropriate by marking it with X:

1. Please indicate your gender	Male	Female					
2. Please indicate your age	<20	Between 20 and 30	Between 21 and 30	Between 31 and 40	>41		
3. Your highest qualification	Primary School	High school	Diploma	Under Graduate	Post Graduate	Other (Please specify)	
4. How would you rank your level of E-Commerce knowledge	Novice	Beginner	Intermediate	Advanced			
5. What industry does your organization fall in	Engineering	ICT	Tourism & Entertainment	Financial Services	Manufacturing	Media Marketing & Consulting	Other (Please specify)
6. How old is your organization	< 6 months	Year	Between 2 and 5 years	>5 years			
7. How did you obtain capital to start the organization	Self-sponsorship	Relatives	Donors	Bank Loan	Other (Please specify)		
8. How many employees are there in your company	<10	Between 11 and 20	Between 21 and 30	Between 31 and 40	Between 41 and 50	>51	

For each of the following statements, please select the response you feel most appropriately reflects the ***extent to which you agree***:

ORGANIZATIONAL FACTORS					
E-COMMERCE AWARENESS	**Strongly Disagree**				**Strongly Agree**
1. Our organization is aware of E-Commerce implementations of our partner organizations	1	2	3	4	5
2. Our organization is aware of our competitors' E-Commerce implementations	1	2	3	4	5
3. Our organization understands E-Commerce business models that can be applicable to our business	1	2	3	4	5
4. Our organization has thought about whether or not E-Commerce has impacts on the way business is to be conducted in our industry	1	2	3	4	5
5. Our organization has considered whether or not businesses in our industry that fail to adopt E-Commerce and e-business would be at a competitive disadvantage	1	2	3	4	5
E-Commerce Relative Advantage					
6. E-Commerce will allow us to better communicate with our business partners.	1	2	3	4	5
7. E-Commerce will allow us to cut costs in our operations.	1	2	3	4	5
8. Implementing E-Commerce will increase the profitability of our business.	1	2	3	4	5
9. Adoption of E-Commerce will provide timely and accurate information for decision making	1	2	3	4	5
10. Adoption of E-Commerce will decrease transactional delays and improve customer services					
11. If we adopt E-Commerce we would lose our customers to our competitors	1	2	3	4	5
Compatibility					
12. E-Commerce will be compatible with my organisation's strategic objectives	1	2	3	4	5
13. E-Commerce will be compatible with my organisation's values and beliefs.	1	2	3	4	5
14. E-Commerce will be compatible with my organisation's past experiences and history.	1	2	3	4	5
15. E-Commerce will be compatible with my organisation's requirements.	1	2	3	4	5
16. E-Commerce will be compatible with my organisation's technological infrastructure.	1	2	3	4	5
Cost: time and money					
17. The costs of implementing E-Commerce would be far greater than the benefits	1	2	3	4	5
18. The costs of supporting E-Commerce will be prohibitively high for my organization	1	2	3	4	5
19. The costs of training employees to use E-Commerce will be prohibitively high for	1	2	3	4	5
20. The costs of implementing for my employees will be prohibitively high	1	2	3	4	5
21. Establishing E-Commerce operations with my trading partners would be cost effective	1	2	3	4	5
Image					
22. People who use E-Commerce have more prestige than those who do not.					
23. People who use E-Commerce have a high profile.					
24. Using E-Commerce is a status symbol.					
OWNER ATTITUDE AND COMMITMENT					
25. I have prior knowledge to E-Commerce which is sufficient to implement and maintain an E-Commerce initiative in my organization.	1	2	3	4	5
26. I have knowledge about emerging developments in E-Commerce	1	2	3	4	5
27. I provide strong and involved leadership when it comes to E-Commerce in my organization	1	2	3	4	5
28. I support the implementation of E-Commerce in my organization	1	2	3	4	5
29. I have a desire to portray my organization as a leader in E-Commerce	1	2	3	4	5
30. I am willing to take the risk involved in adopting E-Commerce	1	2	3	4	5
31. I have established clear goals and a clear picture of how E-Commerce can help these goals	1	2	3	4	5
32. My vision of E-Commerce activities is widely communicated and understood throughout our organization	1	2	3	4	5
33. I have frequent interactions with professional bodies about current trends in E-Commerce usage	1	2	3	4	5
HUMAN RESOURCES	**Strongly Disagree**				**Strongly Agree**
34. Most of our employees are computer literate	1	2	3	4	5
35. Most of our employees have unrestricted access to computers	1	2	3	4	5
36. Although my employees are computer literate, the skills needed to implement and use E-	1	2	3	4	5

Commerce are too complex for my organization					
ICT EXPERTISE					
37. My organization has sufficient expertise to implement and maintain E-Commerce	1	2	3	4	5
38. My organization will have to train our employees to implement and maintain E-Commerce	1	2	3	4	5
TECHNOLOGICAL RESOURCES					
39. We have sufficient experience with network based applications	1	2	3	4	5
40. We have sufficient business resources to implement E-Commerce	1	2	3	4	5
41. Our organization is well computerized with LAN and WAN	1	2	3	4	5
42. We have high bandwidth connectivity to the Internet	1	2	3	4	5
43. Our existing systems are flexible to integrate E-Commerce	1	2	3	4	5
44. Our existing systems are customizable to our customers' needs	1	2	3	4	5
GOVERNANCE					
45. Roles, responsibilities and accountability are clearly defined within each E-Commerce initiative	1	2	3	4	5
46. E-Commerce accountability is extracted via on-going responsibility	1	2	3	4	5
47. Decision-making authority has been clearly assigned for all E-Commerce initiatives	1	2	3	4	5
48. We thoroughly analyze the possible changes to be caused in our organization, suppliers, partners, and customers as a result of each E-Commerce implementation	1	2	3	4	5
49. We follow a systematic process for managing change issues as a result of E-Commerce implementations	1	2	3	4	5
50. We define a business case for each E-Commerce implementation or initiative	1	2	3	4	5
51. We have clearly defined metrics for assessing the impact of our E-Commerce initiatives	1	2	3	4	5
52. Our employees at all levels support our E-Commerce initiatives	1	2	3	4	5
BUSINESS RESOURCES					
53. Our people are open and trusting with one another	1	2	3	4	5
54. Communication is very open in our organization	1	2	3	4	5
55. Our organization exhibits a culture of enterprise wide information sharing	1	2	3	4	5
56. We have a policy that encourages grass roots E-Commerce initiatives	1	2	3	4	5
57. Failure can be tolerated in our organization	1	2	3	4	5
58. Our organization is capable of dealing with rapid changes	1	2	3	4	5
ENVIRONMENTAL FACTORS					
MARKET FORCES EREADINESS	**Strongly Disagree**				**Strongly Agree**
59. We believe that our customers are ready to do business on the Internet	1	2	3	4	5
60. We believe that our business partners are ready to conduct business on the Internet	1	2	3	4	5
GOVERNMENT EREADINESS					
61. We believe that there are effective laws to protect consumer privacy	1	2	3	4	5
62. We believe that there are effective laws to combat cyber crime	1	2	3	4	5
63. We believe that the legal environment is conducive to conduct business on the Internet	1	2	3	4	5
64. The government demonstrates strong commitment to promote E-Commerce	1	2	3	4	5
SUPPORTING INDUSTRIES EREADINESS					
65. The telecommunication infrastructure is reliable and efficient to support E-Commerce and eBusiness	1	2	3	4	5
66. The technology infrastructure of commercial and financial institutions is capable of supporting E-Commerce transactions	1	2	3	4	5
67. We feel that there is efficient and affordable support from the local IT industry to support our move on the Internet	1	2	3	4	5
68. My organization relies on external support (donors and vendors) to maintain E-Commerce	1	2	3	4	5
69. Secure electronic transaction (SET) and/or secure electronic commerce environment (SCCE) services are easily available and affordable	1	2	3	4	5
E-COMMERCE ADOPTION					
E-Commerce adoption	**Strongly Disagree**				**Strongly Agree**

70. We have not considered E-Commerce. For example, we are not connected to the Internet, no e-mail.	1	2	3	4	5
71. We have considered E-Commerce but we are only connected to the Internet with e-mail but no web site	1	2	3	4	5
72. We have a static web site that publishes basic company information on the web without any interactivity	1	2	3	4	5
73. We have an Interactive web presence that accepts queries, e-mail; and form entry from users	1	2	3	4	5
74. We have a Transactive web presence that performs online selling and purchasing of products and services including customer service	1	2	3	4	5
75. We have an Integrated web presence that integrates our systems with suppliers, customers and other back office systems allowing most of the business transactions to be conducted electronically	1	2	3	4	5

Thank you for participating and completing this survey. As mentioned before, all the information you have provided will be totally confidential. You will not be identified from the information you provided, and no information will be passed on to any third parties. If you would like a summary of the findings, please provide your details below:

Name:

……

Email Address:

……

APPENDIX 2: QUALITATIVE RESEARCH INSTRUMENT

UNIVERSITY OF CAPE TOWN

Department of Information Systems

Leslie Commerce Building

Engineering Mall. Upper Campus

OR Private Bag. Rondebosch 7701

Tel: 650-2261

Fax No: (021) 650-2280

To Whom It May Concern:

Electronic Commerce (E-Commerce) has the ability to connect business partners (specifically customers and suppliers) electronically to enhance business efficiency through lowering of transaction and communication costs. It allows sharing of information, knowledge and experience, and can empower people. E-Commerce is now being linked to Small and Medium Enterprises (SMEs) in both developed and developing countries. This study forms part of research by the University of Cape Town (UCT), Department of Information Systems (IS) to investigate how E-Commerce is perceived and used in Least developed countries, specifically by Small and Medium Enterprises. The study will consist of a set of interviews and observations with SMEs, donors and government.

We would greatly appreciate your time and effort in responding to the interviews. Your participation is entirely voluntary. Neither you nor the organisation you refer to will be named. The data collected will be used purely for academic purposes, which includes publication of findings in suitable outlets. At the end of the interview, please indicate if you would like a summary of the findings.

Yours sincerely,

Salah Kabanda
E-Mail: salah.kabanda@uct.ac.za

Irwin Brown (Supervisor)
Associate Professor: Irwin.Brown@uct.ac.za

E-COMMERCE - IN-PRACTICE

Business Process

- **What action(s) /process (es) take place/ in your organization during an E-Commerce transaction?**
- **What processes/practices do you follow when a customer makes an order?**
- **What processes/practices do you follow when placing an order to your supplier?**
- **What action(s) /process (es) should be taking place in your organization if E-Commerce is to be adopted? [If not already adopted? Or if a greater level of adoption is to occur?]**
- **Does everyone know those actions? How do they become known? Who creates those "actions"?**
- **Which language is used to communicate those actions/processes? Why this language?**

INTERPRETIVE SCHEMA	FACILITY	NORM
Awareness ▪ Is your business aware of whether your business partners and competitors have implemented or used E-Commerce ▪ What potential opportunities and threats in your organization exists as enabled by E-Commerce? ▪ Can you elaborate on the E-Commerce business model applicable to your organization? Which one are you using right now and which would be ideal? ▪ What is your opinion regarding businesses in your industry that fail to adopt E-Commerce and e-business? Do you think they would be at a competitive disadvantage? **Management Support/ Attitude** ▪ How does management provide support, strong and involved leadership when it comes to E-Commerce	**Human resources** ▪ Would you say you have sufficient expertise to implement and maintain E-Commerce? ▪ Are employees enthusiastic about E-Commerce? ▪ Have you had E-Commerce related training or do you still require training to implement and maintain E-Commerce? ▪ Does your company provide employees with this training? What specific training is available and/or you still need? o network based applications o computer literacy o English o Programming o Others? **Technological resources** ▪ Are you well computerized with LAN and WAN	**Organizational Norms** ▪ What norms and values provide the normative context for the exploitation of E-Commerce opportunities? ▪ What procedure do you follow to ensure that financial, human capital, technological maintenance and upgrade aspect of E-Commerce are maintained? ▪ Do you have rules on how to attend to online customer queries? Do you have a specific model that you follow whilst negotiating with a client? ▪ What happens if these rules (way of doing things) are not followed? ▪ Do you have clearly defined metrics for assessing the impact of E-Commerce?

- supports the implementation of E-Commerce
- portrays the organization as a leader in E-Commerce
- takes the financial risk involved in adopting E-Commerce
- has established clear goals and a clear picture of how E-Commerce can help achieve these goals
- has widely communicated the vision of E-Commerce activities throughout the organization by ensuring that
    - it is compatible with organisation's strategic objectives and requirements
    - it is compatible with organisation's values, beliefs, attitudes past experiences and history.
    - it is compatible with organisation's technological infrastructure.
    - exhibiting a culture of enterprise wide information sharing
- Compared to other IT implementation, is/was priority on E-Commerce very low/low/adequate/high/very high

Compatibility

- Have you thoroughly analyze the possible changes to be caused in your organization, even to your suppliers, partners, and customers as a result of E-Commerce implementation:
    - Change towards your values, beliefs, attitudes past experiences and history.
    - Change towards your strategy
    - Change towards your technological infrastructure.
    - Change towards the way you interact with business partners (customers/suppliers etc)

- Do you have high bandwidth connectivity to the Internet
- Do you have a running website that you can conduct E-Commerce transaction
- Are your existing systems flexible enough to integrate E-Commerce
- Do employees have unrestricted access to computers/Internet?
- Do you have an organizational credit card?

Other resources

- What other resources do you have or still need for E-Commerce?
    - Reliable electricity
    -

How do you arrive at these metrics?

- Do you have a policy that encourages grass roots E-Commerce initiatives? Who was involved in its formulation?

Market and Industry Norms

- Who are your trading partners? Do you think they are ready for E-Commerce? Why?

- Are you aware if your competitors are planning to adopt E-Commerce in their business? How will this affect your business? Would you react to what your competitors are doing in terms of E-Commerce

Institutional Norms

- Are you aware of the National ICT Policy Framework and the Tanzania Communications Commission (regulators)?
- What is your opinion on the National ICT policy?
- What government policies make it possible for you to succeed (or fail) in your E-Commerce operations
- Are you satisfied with the way your business partners are trading with you?
- What is your opinion on:
- current laws to protect consumer privacy
    - laws to combat cyber crime
    - legal environment
    - government's commitment to promote E-Commerce

SME BUSINESS ACTION AND INTERACTIONS

Note the sign systems: speech, writings, images, gestures etc

Communication

Organizational Communication

- What are the means of communication and understanding related to the explanation of E-Commerce in your organization?
- What does E-Commerce mean to your company?
  - Allows better communication with business partners. How?
  - Has cut costs in your operations. How?
  - Has increased the profitability of your business. How?
  - Provides timely and accurate information for decision making. How?
  - Decreased transactional delays. How?
  - Improved customer services. How?
  - Had made you lose your customers to competitors. How?
- How do you communicate with other employees?
- Do you have business branches? How do you communicate with employees in those branches?

Market and Supporting Industry

- How do you communicate with your customers
- How do you communicate with your suppliers or business partners?
- How do you follow up client's requests or orders?

Institutional Environment

Power

Organizational Power

- Are roles, responsibilities and accountability clearly defined for E-Commerce initiative?
- Who is accountable for E-Commerce projects?
- Who states what action should be taken next with respect to E-Commerce and why this person? How did this person acquire this position?
- Whose decision becomes final when it comes to E-Commerce implementation/activities?
- What is your opinion (belief/feelings) with regard to this person being the one in that position?

Market and Supporting Industry

- Do you have access to credit/loan from banks? Are you satisfied, with the procedures you go through in order to acquire the credit?
- Do larger organizations support your businesses endeavors?
- If you were to advertise for an IT post, would it be difficult to get one.....Can you easily access IT expertise?
- Do you think your organization has the technical knowledge or do you rely on vendor support? What is your opinion on the vendor support?
- Who is your ISP and what is your opinion on the quality of service provided by the ISP?

  Africa Online; Internet Africa; Raha.com; UCC; Cats-Net Ltd; Tele2 (Cyber Twiga); HabariNet(Arusha); Zanzinet

Sanction

Organizational Penalties

- What penalties do you incur if you do not obey organizational rules? (Provide an example of a scenario in which rules/protocols were not followed and you were reprimanded)
  - Do not get promoted?
  - Assigned more workload?
  - Ignored by management
  - Get less budget for your projects

Market and Industry Penalties

- What penalties do you incur if you do not obey customer/supplier or your business partner's rules? (Provide an example of a scenario in which rules/protocols were not followed and as an organization you were reprimanded)
  - Fail to get funding or

- What communication mechanism exists between you and:
  - The department of trade and industry?
  - Small Industries Development Organisation (SIDO)
  - The department of science and technology?
- What is your opinion on the effectiveness and efficiency of this communication process

Institutional Environment

- What is your opinion with regard to
  - Reliability and efficiency of the telecommunication infrastructure?
  - The technology infrastructure of commercial and financial institutions?
  - Local IT industry support for Internet and E-Commerce activities?
  - Donors and vendors support for Internet and E-Commerce activities?
  - Availability and affordability of Secure electronic transaction (SET) and/or secure electronic commerce environment (SCCE) services?
- When an important legal issue or problem arises, would you feel comfortable depending on the information provided by legal system in the country with regard to E-Commerce?
- If you are faced with a legal problem whilst conducting E-Commerce, who would you contact?
- can you always rely on the ICT policy for legal related matters of the Internet
- If you were the customer would you feel that you could count on the legal electronic system of the country to help with a crucial legal problem
- Do you think the electronic environment in the country has enough safeguards to make you feel comfortable using it to transact business
- Do you feel assured that legal and technological structures adequately protect your business from problems on the Internet
- Are you confident that encryption and other technological advances on the Tanzanian electronic environment (Internet) make it safe for you to do business in there
- Do you think entering credit card information over the Web is unsafe and risky?

loans from business partners such as the bank
  - The customer switches from your company to another company
  - The supplier and customers lose their confidence and trust in you

Institutional Penalties

- What penalties do you incur if you do not obey institutional rules? (Provide an example of a scenario in which rules/protocols were not followed and as an organization you were reprimanded)
  -

APPENDIX 3: E-COMMERCE LITERATURE IN DEVELOPING AND LEAST DEVELOPED COUNTRIES

Region	Total papers	Focus	method	underlying theory	geographic coverage	Author(s)
Least developed country (31)	11	▪ E-Commerce diffusion ▪ E-Commerce Adoption ▪ Behavioral influences on E-Commerce ▪ Electronic-Banking; ▪ e-Government Diffusion	▪ Survey based through a questionnaire ▪ Literature review analysis ▪ Feature investigation method ▪ Qualitative and interpretive approach - unstructured and semi-structured face-to-face interviews, web-site analysis, observation and document analysis ▪ Multiple regression analysis, Exploratory factor analysis, Principle component analysis ▪ Case study	▪ study social relational and group theories; ▪ The technology acceptance model (TAM) ▪ Parsimonious evaluation framework ▪ Country readiness for the networked world ▪ Change-agent theory ▪ Theory of planned behavior ▪ Unified Theory of Acceptance and Use of Technology (UTAUT)	▪ Ethiopia, ▪ Rwanda (2), ▪ Gambia, ▪ Uganda (3), ▪ Zambia, ▪ Botswana (3)	Shemi & Procter (2013) Lin et al (2011) Worku (2010) Asiimwe et al (2010) Uzoka (2008) Weerakkody et al (2007) Uzoka et al (2007) Uzoka & Seleka (2006) Duncombe & Molla (2006) Mwangi (2006) Esselaar & Miller (2001)
	20	▪ Implementation Challenges of Mobile Commerce ▪ Appropriation of mobile telephony at the bottom of the pyramid ▪ Social and Economic Implications of Mobile Telephony ▪ Mobile Telephony in Economic Development ▪ Mobile Opportunities, Mobile Problems ▪ Consumer use of mobile ICT ▪ Mobile Phone Usage among Women Entrepreneurs ▪ Mobile Phones and Agricultural Markets ▪ mobile phones to rural livelihoods and poverty reduction	▪ Ethnographic ▪ geospatial approach ▪ Survey based ▪ questionnaire, face to face interviews and focus group discussions ▪ Online Questionnaire & secondary data collected from books, academic journals, articles from the conferences, internet and newspapers	▪ Technology Appropriation ▪ Theory On Price Dispersion ▪ Activity And Gender Theories ▪ Theories Of Technology Acceptance And Technology Transfer ▪ Sustainable Livelihood Framework ▪ The Capability Approach to Livelihood Status. ▪ Toe Framework ▪ Task-Technology Fit (TTF) model.	▪ Bangladesh (5) ▪ Afhanistan ▪ Mozambique ▪ LDC ▪ Uganda (2) ▪ Tanzania (3) ▪ Rwanda (4) ▪ Niger ▪ Malawi (3)	▪ Hossain et al (2011) ▪ Dey et al (2013) ▪ Sagan (2012) ▪ Komunte et al (2012) ▪ Meso et al (2005) ▪ Nyamba & Mlozi (2012) ▪ Mtingwi & Van Belle (2012) ▪ Hossain (2010) ▪ Sife et al (2010) ▪ Blumenstock et al (2010) ▪ Ferris et al (2008) ▪ Saidi (2009, 2010) ▪ Myhr & Nordstrom (2007) ▪ Donner (2005, 2006,2007)

Developing countries (61)	50	▪ E-commerce adoption and Acceptance ▪ Diffusion of ICTs and E-commerce adoption in manufacturing SMEs ▪ Perceived benefits and management commitment to e-business usage ▪ Regulatory Challenges ▪ E-Commerce Usage ▪ E-Commerce Strategy and Performance ▪ Adoption and effectiveness of electronic banking ▪ Effective utilisation of ICT and the adoption of more sophisticated ICT solutions in SMEs ▪ E-Readiness Factors in E-Commerce Adoption ▪ Effects of infrastructure and policy on e-business ▪ Predicting e-commerce adoption intentions ▪ Availability of E-commerce Support Determinants of E-Commerce Adoption ▪ Predicting the success of B2B e-commerce ▪ Growth of the Electronic Commerce ▪ Environment factors affecting B2B e-marketplace adoption	▪ Cross-Sectional Survey; Measures Of Central Tendency, Dispersion And Correlation Analysis. ▪ Survey Based Through a Questionnaire ▪ Face-To-Face Interviews ▪ Case Study Approach Utilising Semi-Structured Interviews, Observation and Document Review ▪ Literature Review Analysis ▪ Advanced Multivariate Modeling (Structural Equation Modeling) ▪ Partial Least Squares Analysis ▪ Multiple Regression Model ▪ Fuzzy Preference Relations - Multiple Case Study	▪ Resource Base View theory ▪ Diffusion of Innovation (DOI) ▪ Innovation Decision Process (IDP) ▪ Technology–Organization–Environment (TOE) Model; ▪ Technology Acceptance Models (TAM) ▪ Internet adoption models; ▪ EDI adoption models ▪ Transaction cost theory and strategic management perspectives ▪ Perceived Organizational E-Readiness (POER) And Perceived Environmental E-Readiness (PEER) ▪ Innovation Diffusion Characteristics ▪ Analytic Hierarchy Process (AHP) ▪ A Culture Theory	▪ Kenya (6), ▪ South Africa (9), ▪ Zimbabwe (2) ▪ Ghana (4) ▪ Nigeria ▪ Libya ▪ Egypt (2) ▪ Spanish- /Portuguese speaking countries of North/South America, Central America, and the Caribbean. ▪ Chile ▪ Costa Rica ▪ Iran (3) ▪ Saudi Arabia ▪ Srilanka ▪ Malaysia ▪ Thailand ▪ Vietnam ▪ Singapore (2) ▪ Indonesia ▪ Taiwan (2) ▪ China (5) ▪ India (2) ▪ Mexico ▪ Japan ▪ Brazil	▪ Rabie (2013), Machfud & Kartiwi (2013) ▪ Asiabugwa & Munyoki (2012), Zanamwe et al (2012), Taylor & Owusu (2012), Iddris F (2012), Abou-Shouk et al (2012) Van Huy et al., (2012) ▪ Abdulghader et al (2011) Apulu et al, (2011), Grandon et al., (2011), Al Noor & Arif (2011), Gilaninia et al. (2011), Ghobakhloo et al (2011), Datta (2011), Bansal (2011) Zhai (2011) Alghamdi et al (2011) ▪ Abbasi et al (2010), Gikandi and Bloor (2010),Okoli et al (2010) ▪ Jobodwana, (2009), Jianyuan, & Chunjuan (2009), Riyadh et al (2009), Nyangosi et al (2009), Macharia (2009), Wang and Lin (2009) Teo et al (2009) ▪ Maswera et al., (2008) Boateng et al., (2008) Kapurubandara & Lawson (2008), Kurnia and Peng (2008) ▪ Oreku et al (2007), Hinson and Boateng (2007), Molla & Heeks (2007), Warden & Motjolopane (2007) Alam et al (2008) ▪ Migiro (2006),Boateng and Molla (2006) ▪ Molla & Licker (2005). ▪ Vatanasakdakul & Tibben (2004) ▪ Ghashghai, & Lewis (2003). ▪ Cloete et al (2002), Tregurtha and Vink (2002), Travica (2002), Gibbs et al (2002)
	18	▪ mCommerce Adoption ▪ Adoption of Mobile Payment Systems ▪ Determinants of Internet and Cell Phone Banking Adoption ▪ Mobile Phones and Financial Services ▪ Trust and Risk in M-Commerce ▪ Comparative Analysis of Mobile Phone Usage among Women Entrepreneurs ▪ Evidence On Mobile Use By Micro And Small Enterprises In Developing Countries ▪ Consumers' attitudes towards online and mobile banking ▪ Mobile phones and the informal Economy ▪	▪ A Survey Approach ▪ Systematic Review Methodology ▪ Questionnaires ▪ Questionnaire, Face To Face Interviews And Focus Group Discussions ▪ Interviews And Secondary Data Analysis ▪ Case Study	▪ Activity And Gender Theories ▪ TAM ▪ Innovation Diffusion characteristics ▪ Decomposed theory of planned behaviour ▪ Consumer behaviour, attitude and motivation. ▪ UTAUT ▪ Innovation System conceptual framework ▪ attitudinal factors, subjective norm(social factors) and perceived behavioural control factors ▪ Technology-Organization-Environment (TOE) framework,	▪ South Africa (5) ▪ Nigeria ▪ Developing countries ▪ Kenya (2) ▪ Ghana (3) ▪ Zimbabwe ▪ China (3) ▪ India (2)	▪ Larkotey et al (2013) ▪ Komunte et al (2012), Chiumbu & Nyamanhindi (2012) ▪ Boating (2011) ▪ Zhou et al (2010), Donner & Escobar (2010) ▪ Duncombe & Molla(2009), Joubert & Van Belle (2009), Dörflinger et al (2009) ▪ Jagun et al (2008), Qingfei et al (2008) ▪ Essegbey & Frempong (2011) ▪ Hughes &Lonie (2007), van Biljon & Kotze (2007) ▪ Brown et al (2005), Laforet and Li (2005) ▪ Brown et al (2003)

APPENDIX 4: RESPONDENT PROFILE

Profile of respondent						Organization
Interviewee	Industry	Age group	Gender	Qualifications	Job Title	Number of employees
SME_1	Insurance	20-30	Male	Diploma (Business Administration)	Owner /manager	<10
SME_2	Tourism & Entertainment	20-30	Female	Diploma (Business Administration)	Marketing /sales officer	10-20
SME_3	Tourism & Entertainment	20-30	Male	Postgraduate	Technical (ICT) manager	>51
SME_4	Tourism & Entertainment	>40	Male	Postgraduate	Network admin	40-50
SME_5	ICT	20-30	Male	Postgraduate	Network admin	>51
SME_6	Media, marketing & consulting	20-30	Male	Diploma (Business Administration)	Marketing /sales officer	40-50
SME_7	Engineering	>40	Male	Undergraduate	Network admin	<10
SME_8	ICT	>40	Male	Postgraduate	Network admin	<10
SME_9	Engineering	20-30	Male	Postgraduate	Operations officer	>51
SME_{10}	ICT	20-30	Male	Undergraduate	Network admin	<10
SME_{11}	ICT	30-40	Male	Undergraduate	Network admin	<10
SME_{12}	ICT	30-40	Male	Postgraduate	Network admin	>51
SME_{13}	Protection & safety	>40	Male	Postgraduate (MBA)	Owner/Manager	<10
SME_{14}	Engineering	>40	Male	Diploma (Business Administration)	Operations officer	10-20
SME_{15}	Transport	20-30	Male	High school	Cab driver	>51
SME_{16}	Insurance	>40	Male	High school	Secretary /sales officer	10-20
SME_{17}	ICT	30-40	Male	Undergraduate	Network admin	<10
SME_{18}	Manufacturing	>40	Female	Undergraduate	Marketing officer	>51
SME_{19}	Tourism & Entertainment	>40	Female	Diploma (Business Administration)	Marketing officer	<10
SME_{20}	Tourism & Entertainment	>40	Male	Postgraduate	Marketing and sales officer	10-20
SME_{21}	Manufacturing	>40	Female	Diploma (Business Administration)	Operations officer	>51
SME_{22}	Tourism & Entertainment	>40	Male	Diploma (Business Administration)	Marketing officer	>51
SME_{23}	Tourism & Entertainment	>40	Female	Undergraduate	Marketing officer/ network admin	>51
SME_{24}	ICT	>40	Male	Postgraduate	System analyst & Network admin	<10
SME_{25}	Media, marketing & consulting	30-40	Male	Diploma (Business Administration)	Marketing officer	30-40

SME_{26}	Tourism & Entertainment	30-40	Male	Diploma (Business Administration & IT)	Network administrator	40-50
SME_{27}	Laundry services	30-40	Male	Diploma (Business Administration)	Accountant	<10
SME_{28}	Financial services	20-30	Male	Undergraduate	Accountant	<10
SME_{29}	Tourism & Entertainment	20-30	Male	Undergraduate	Communication officer	<10
SME_{30}	Manufacturing	30-40	Male	Diploma (Business Administration)	Technical manager	<10
SME_{31}	Tourism & Entertainment	>40	Male	Diploma (Business Administration)	Marketing officer	<10
SME_{32}	Insurance	30-40	Male	Diploma	Owner/Manager	<10
SME_{33}	Insurance	>40	Male	High school	Owner/Manager	<10
Trade & Industry	Government	>40	Male	Postgraduate	Manager	
University	Government	>40	Male	Postgraduate	Lecturer	
Financial institution	Banking	>40	Male	Undergraduate	Systems analyst	

APPENDIX 5: MEDIA TEXT

Empirical Material	Description Of The Media Texts	Reference
EM_1	Issues of higher education in Tanzania	http://siteresources.worldbank.org/INTWBISFP/Resources/0_Prof_Msolla.pdf
EM_2	Tanzania: Stakeholders build strategy to integrate ICT in secondary education *Internet & Technology (2005-02-10, Issue 193)*	http://pambazuka.org/en/category/internet/26807
EM_3	Tanzania: Government launch ICT education without training policy	http://www.tanzaniagateway.org/news/news/article.asp?ID=52
EM_4	ICT in education in Tanzania Lessons and experiences from IICD-supported projects	http://www.iicd.org/files/Tanzania_ICT%20in%20education.pdf
EM_5	Post-Basic Education and Poverty in Tanzania	http://www.tzonline.org/pdf/postbasiceducationandpovertyintanzania.pdf
EM_6	ICT in Education in Tanzania	https://www.infodev.org/infodev-files/resource/InfodevDocuments_432.pdf
EM_7	Building Local Capacity for ICT Policy and Regulation: A Needs Assessment and Gap Analysis for Africa, the Caribbean, and the Pacific	http://www.infodev.org/infodev-files/resource/InfodevDocuments_508.pdf
EM_8	Chapter 5: E-Documents and E-Signatures in Tanzania: Their Role, Status, and the Future. Tanzania: lack of appropriate law hinders online business registration	http://www.irma-international.org/viewtitle/64848/ http://www.businesstimes.co.tz/
EM_9	Tanzania: Admissibility Of Electronic Evidence The legal and regulatory framework for ICT in developing countries: Case study of ICT and the law of evidence in Tanzania	http://www.mondaq.com/x/35390/Regulatory/Admissibility+Of+Electronic+Evidence http://cs.joensuu.fi/ipid2008/abstracts/Mollel%20Andrew_ICT4D%20PAPER.pdf
EM_{10}	Cyber Security In Tanzania – Country Report	http://www.itu.int/osg/spu/cybersecurity/contributions/Tanzania_Ulanga_paper.pdf
EM_{11}	Building capacity through cross-border tertiary education Critical Perspectives on Education and Skills in Eastern Africa on Basic and Post-Basic Levels	http://www.oecd.org/education/research/37477437.pdf http://www.norrag.org/en/publications/norrag-news/online-version/